```
     FILE 'REGISTRY' ENTERED AT 19:09:54 ON 17 FEB 2004
L1              8 S 67-64-1 OR 78-93-3 OR 107-87-9 OR 591-78-6 OR 110-43-0 OR 111

     FILE 'CAPLUS, WPIDS, CABA, CROPB, CROPU' ENTERED AT 19:11:12 ON 17 FEB
     2004

     FILE 'REGISTRY' ENTERED AT 19:11:19 ON 17 FEB 2004
                  SET SMARTSELECT ON
L2            SEL L1 1- CHEM :      74 TERMS
                  SET SMARTSELECT OFF

     FILE 'CAPLUS, WPIDS, CABA, CROPB, CROPU' ENTERED AT 19:11:20 ON 17 FEB
     2004
L3         288726 S L2/BI
L4          50771 S BEE OR BEES OR HONEYBEE OR HONEYBEES OR APIS OR APINAE OR BOM
L5            384 S L3 AND L4
L6             99 S L5 AND (MITE OR MITES OR VARROA OR ACARAPIS OR ACARI? OR PES
L7             85 DUP REM L6 (14 DUPLICATES REMOVED)

=> d que
L1              8 SEA FILE=REGISTRY 67-64-1 OR 78-93-3 OR 107-87-9 OR 591-78-6
                  OR 110-43-0 OR 111-13-7 OR 106-35-4 OR 123-19-3
L2                SEL  L1 1- CHEM :      74 TERMS
L3         288726 SEA L2/BI
L4          50771 SEA BEE OR BEES OR HONEYBEE OR HONEYBEES OR APIS OR APINAE OR
                  BOMBINAE OR EUGLOSSINAE
L5            384 SEA L3 AND L4
L6             99 SEA L5 AND (MITE OR MITES OR VARROA OR ACARAPIS OR ACARI? OR
                  PEST? OR PARASIT?)
L7             85 DUP REM L6 (14 DUPLICATES REMOVED)


=>
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All Reviewed
2/17/04

=> d 1-85 bib ab kwic

L7 ANSWER 1 OF 85 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
AN 2003-523150 [49] WPIDS
DNC C2003-140747
TI Composition used as **acaricide** for modulating **acarid**
infestation of colony of **bees** comprises alkene with odd number
of carbon atoms from 15-23 e.g. cis-6-heptadecene and excipient, diluent
or carrier.
DC C03
IN DELLA VEDOVA, G; MILANI, N; NAZZI, F
PA (UYUD-N) UNIV UDINE
CYC 102
PI WO 2003043416 A2 20030530 (200349)* EN 7p
RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU
MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK
DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR
KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT
RO RU SC SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU
ZA ZM ZW
ADT WO 2003043416 A2 WO 2002-IB5447 20021125
PRAI IT 2001-UD193 20011123
AB WO2003043416 A UPAB: 20030731
NOVELTY - Composition comprises at least one alkene of cis configuration
with an odd number of carbon atoms from 15-23 and at least one excipient,
diluent or carrier. The alkene comprises cis-6-heptadecene,
cis-7-heptadecene, cis-8-heptadecene, cis-9-heptadecene,
cis-6-pentadecene, cis-7-pentadecene, cis-8-pentadecene or
cis-9-pentadecene.
ACTIVITY - **Acaricide**.
MECHANISM OF ACTION - None given.
USE - Used for modulating **acarid** (preferably of varroidae
family e.g. **Varroa** destructor) infestation of a colony of
bees and for preventing or treating **mite** infestation of
bees (claimed).
In a test for evaluating inhibition of reproduction of **varroa**
destructor in natural cells by a composition containing cis-8-heptadecene,
the natural cells were deposited into **acetone** (1 mu l)
containing cis-heptadecene (100 ng) (test) and **acetone** alone
(control). The natural cells were capped with honeycomb taken from
infested hives and injected by the solutions. After 10 days the honeycomb
was inspected. The number of offspring per **varroa** female in the
(test)/(control) was found to be 3.2/3.8.
ADVANTAGE - The composition exhibits effective reduction, prevention,
inhibition, discouragement, disinfection or other amelioration of
mites in **bee** colonies.
Dwg.0/0
TI Composition used as **acaricide** for modulating **acarid**
infestation of colony of **bees** comprises alkene with odd number
of carbon atoms from 15-23 e.g. cis-6-heptadecene and excipient, diluent
or carrier.
AB . . .
one excipient, diluent or carrier. The alkene comprises cis-6-heptadecene,
cis-7-heptadecene, cis-8-heptadecene, cis-9-heptadecene,
cis-6-pentadecene, cis-7-pentadecene, cis-8-pentadecene or
cis-9-pentadecene.
ACTIVITY - **Acaricide**.
MECHANISM OF ACTION - None given.
USE - Used for modulating **acarid** (preferably of varroidae
family e.g. **Varroa** destructor) infestation of a colony of
bees and for preventing or treating **mite** infestation of

bees (claimed).
In a test for evaluating inhibition of reproduction of **varroa** destructor in natural cells by a composition containing cis-8-heptadecene, the natural cells were deposited into **acetone** (1 mu l) containing cis-heptadecene (100 ng) (test) and **acetone** alone (control). The natural cells were capped with honeycomb taken from infested hives and injected by the solutions. After 10 days the honeycomb was inspected. The number of offspring per **varroa** female in the (test)/(control) was found to be 3.2/3.8.
ADVANTAGE - The composition exhibits effective reduction, prevention, inhibition, discouragement, disinfection or other amelioration of **mites** in **bee** colonies.
Dwg.0/0

TECH. . . .
alkene or a composition or a distribution system comprising a spray device or a distribution system comprising sugar-based, feed for **bees**.

TT TT: COMPOSITION **ACARID** MODULATE **ACARID** INFESTATION COLONY **BEE** COMPRISE ALKENE ODD NUMBER CARBON ATOM CIS EXCIPIENT DILUTE CARRY.

L7 ANSWER 2 OF 85 CABA COPYRIGHT 2004 CABI on STN
AN 2003:202620 CABA
DN 20033182567
TI Effect of fluvalinate on activity of honey **bee** individuals
AU Ali, M. A. M.
CS Plant Protection Department, Faculty of Agriculture, Ain Shams University, Shoubra El-Khiema, Cairo, Egypt.
SO Arab Universities Journal of Agricultural Sciences, (2003) Vol. 11, No. 2, pp. 817-826. 22 ref.
Publisher: Faculty of Agriculture, Ain Shams University. Cairo
ISSN: 1110-2675
CY Egypt
DT Journal
LA English
SL Arabic
ED Entered STN: 20031209
Last Updated on STN: 20031209
AB Twenty concentrations of fluvalinate (Apistan) with 98% purity were assayed at 23[deg]C under laboratory and field conditions between June and September 2002 in Fayoum Governorate, Egypt to examine its toxic effect on honey **bees** (**Apis** mellifera). In the field trial, dilution of 20 mg fluvalinate/ml **acetone** was topically applied to evaluate its effect on queen acceptance, mating ratio, superceding and colony vigour. In the experiment, virgin queens were divided into 3 different groups: (1) **acetone** only as untreated control, (2) 20 mg fluvalinate/ml and (3) queens receiving treatment only after mating. The data showed that fluvalinate concentrations of 1-20 mg/ml caused 10-100% mortality of workers, while concentrations of 0.05-50 mg/ml caused mortality of 11.43-100% mortality of drones. Concentrations of 30-100 and 20-80 mg/ml caused 30-100 and 20-100% mortality for queens 24 and 48 hours after treatments, respectively. The LC50s were 3.768, 4.064 and 53.447 for worker, drone and queen honey **bees**, respectively. In the field trial, the queen acceptance was 80, 70 and 75% and queen mating was 65, 60 and 75%. Queen superceding was 0, 40 and 6.67% for groups 1, 2 and 3, respectively. Brood areas were 2296.77, 2445.96 and 2447.17 cm2 for groups 1, 2 and 3, respectively, and the numbers of frames with brood and those covered with **bees** were 2.38, 2.63 and 2.56 for the former and 5.00, 5.42 and 5.38 for the latter for groups 1, 2 and 3, respectively.
TI Effect of fluvalinate on activity of honey **bee** individuals.
AB . . . laboratory and field conditions between June and September 2002 in Fayoum Governorate, Egypt to examine its toxic effect on honey **bees** (**Apis** mellifera). In the field trial, dilution of

20 mg fluvalinate/ml **acetone** was topically applied to evaluate its effect on queen acceptance, mating ratio, superceding and colony vigour. In the experiment, virgin queens were divided into 3 different groups: (1) **acetone** only as untreated control, (2) 20 mg fluvalinate/ml and (3) queens receiving treatment only after mating. The data showed that. . . 24 and 48 hours after treatments, respectively. The LC50s were 3.768, 4.064 and 53.447 for worker, drone and queen honey **bees**, respectively. In the field trial, the queen acceptance was 80, 70 and 75% and queen mating was 65, 60 and. . . 2447.17 cm2 for groups 1, 2 and 3, respectively, and the numbers of frames with brood and those covered with **bees** were 2.38, 2.63 and 2.56 for the former and 5.00, 5.42 and 5.38 for the latter for groups 1, 2. . .

BT **Apis**; Apidae; Hymenoptera; insects; arthropods; invertebrates; animals; North Africa; Africa; Mediterranean Region; Middle East; Developing Countries

CT **acaricides**; drone honey **bees**; fluvalinate; honey **bees**; queen honey **bees**; social insects; toxicity; worker honey **bees**

ORGN **Apis** mellifera

L7 ANSWER 3 OF 85 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 1

AN 2003:684128 CAPLUS

DN 139:360023

TI Simultaneous determination of carbamate and organophosphorus **pesticides** in **honeybees** by liquid chromatography-mass spectrometry

AU Fernandez, M.; Pico, Y.; Manes, J.

CS Laboratori de Bromatologia i Toxicologia, Facultat de Farmacia, Universitat de Valencia, Valencia, 46100, Spain

SO Chromatographia (2003), 58(3/4), 151-158
CODEN: CHRGB7; ISSN: 0009-5893

PB Friedrich Vieweg & Sohn Verlagsgesellschaft mbH

DT Journal

LA English

AB The potential of liq. chromatog.-mass spectrometry (LC-MS) was studied for the simultaneous detn. of 6 teen carbamate and organophosphorus **pesticides** in **honeybees** using a traditional sample prepn. protocol based on **acetone** extn. and dichloromethane partitioning. The performances of both atm. pressure chem. ionization (APCI) and electrospray (ES) interfaces were compared. APCI offered better sensitivity and specificity for a higher range of **pesticides**. Limits of quantification were from 0.01 to 0.17 mg kg-1, at which recoveries obtained were between 64 and 93%, except for pirimicarb that was at 13%, with relative std. deviations ranging from 7 to 20%. Fenitrothion, fenoxycarb, methiocarb and phoxim were found in **bees** from Valencian Community beehives at concns. between 0.03 and 3.75 mg kg-1.

RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Simultaneous determination of carbamate and organophosphorus **pesticides** in **honeybees** by liquid chromatography-mass spectrometry

AB The potential of liq. chromatog.-mass spectrometry (LC-MS) was studied for the simultaneous detn. of 6 teen carbamate and organophosphorus **pesticides** in **honeybees** using a traditional sample prepn. protocol based on **acetone** extn. and dichloromethane partitioning. The performances of both atm. pressure chem. ionization (APCI) and electrospray (ES) interfaces were compared. APCI offered better sensitivity and specificity for a higher range of **pesticides**. Limits of quantification were from 0.01 to 0.17 mg kg-1, at which recoveries obtained were between 64 and 93%, except for pirimicarb that was at 13%, with relative std. deviations ranging from 7

to 20%. Fenitrothion, fenoxycarb, methiocarb and phoxim were found in **bees** from Valencian Community beehives at concns. between 0.03 and 3.75 mg kg-1.

ST carbamate organophosphorus **pesticide honeybee** LCMS ESI APCI

IT Chemical ionization mass spectrometry
(atm.-pressure; simultaneous detn. of carbamate and organophosphorus **pesticides** in **honeybees** by LC-MS with APCI and ESI)

IT **Pesticides**
(organophosphorus; simultaneous detn. of carbamate and organophosphorus **pesticides** in **honeybees** by LC-MS with APCI and ESI)

IT Electrospray ionization mass spectrometry
Honeybee
(simultaneous detn. of carbamate and organophosphorus **pesticides** in **honeybees** by LC-MS with APCI and ESI)

IT 55-38-9, Fenthion 63-25-2, Carbaryl 122-14-5, Fenitrothion 463-77-4D, Carbamic acid, derivs. 944-22-9, Fonofos 1563-66-2, Carbofuran 2032-65-7, Methiocarb 2104-96-3, Bromophos methyl 2642-71-9, Azinphos ethyl 2921-88-2, Chlorpyrifos ethyl 3383-96-8, Temephos 6923-22-4, Monocrotophos 13171-21-6, Phosphamidon 14816-18-3, Phoxim 23103-98-2, Pirimicarb 41198-08-7, Profenofos 72490-01-8, Fenoxycarb
RL: ANT (Analyte); POL (Pollutant); ANST (Analytical study); OCCU (Occurrence)
(simultaneous detn. of carbamate and organophosphorus **pesticides** in **honeybees** by LC-MS with APCI and ESI)

L7 ANSWER 4 OF 85 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 2
AN 2002:675818 CAPLUS
DN 137:181110
TI Compositions for control of **parasitic mites** of honey **bees** and other hive **pests**
IN Erickson, Eric H.; Degrandi-Hoffman, Gloria; Becker, Christian G.; Whitson, Roy S.; Deeby, Thomas A.
PA The United States of America, as Represented by Secretary of Agriculture, USA
SO PCT Int. Appl., 42 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002067914	A1	20020906	WO 2002-US5986	20020228

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	US 2003044443	A1	20030306	US 2002-87161	20020227
	EP 1372623	A1	20040102	EP 2002-723256	20020228

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

PRAI	US 2001-272097P	P	20010228
	US 2002-87161	A	20020227
	WO 2002-US5986	W	20020228

AB The present invention is directed to methods and compns. for use to control **parasitic mites** of honey **bees**,

particularly **Varroa mites**. In one aspect, the invention is directed to control of **parasitic mites** of honey **bees** wherein the active ingredient is a miticidally effective amt. of a selected ketone CH3(CH2)xCO(CH2)yCH3 (x = 0-5, yr = 0-2), or 1-heptanol, Et butyrate, benzaldehyde, heptaldehyde, or d-limonene. In second aspect, the invention is directed to control of **parasitic mites** of honey **bees** wherein the active ingredient is an effective attractant amt. of **2-heptanone**. The attracted **mites** are then trapped or otherwise removed from the locus of the **bees**. The present invention is also directed to methods and compns. which include **2 -heptanone** to control hive invading **pests** of honey **bees**.

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Compositions for control of **parasitic mites** of honey **bees** and other hive **pests**

AB The present invention is directed to methods and compns. for use to control **parasitic mites** of honey **bees**, particularly **Varroa mites**. In one aspect, the invention is directed to control of **parasitic mites** of honey **bees** wherein the active ingredient is a miticidally effective amt. of a selected ketone CH3(CH2)xCO(CH2)yCH3 (x = 0-5, yr = 0-2), or 1-heptanol, Et butyrate, benzaldehyde, heptaldehyde, or d-limonene. In second aspect, the invention is directed to control of **parasitic mites** of honey **bees** wherein the active ingredient is an effective attractant amt. of **2-heptanone**. The attracted **mites** are then trapped or otherwise removed from the locus of the **bees**. The present invention is also directed to methods and compns. which include **2 -heptanone** to control hive invading **pests** of honey **bees**.

ST **honeybee Varroa acaricide** insecticide attractant hive **pest** heptanone

IT Achroia grisella
Aethina tumida
Galleria mellonella
Tropilaelaps
(compns. for control in honey **bee** hive of)

IT **Varroa**
(compns. for control of)

IT **Acaricides**
Honeybee
Insect attractants
Insecticides
Pesticide formulations
(compns. for control of **parasitic mites** of honey **bees** and other hive **pests**)

IT **Pesticides**
(controlled-release; for control of **parasitic mites** of honey **bees** and other hive **pests**)

IT Attractants
(**mite**; compns. for control of **parasitic mites** of honey **bees** and other hive **pests**)

IT **Pesticides**
(slow release; for control of **parasitic mites** of honey **bees** and other hive **pests**)

IT **67-64-1, Acetone,** biological studies 100-52-7, Benzaldehyde, biological studies 105-54-4, Ethyl butyrate **106-35-4, 3-Heptanone 110-43-0, 2-Heptanone 111-13-7, 2-Octanone** 111-70-6, 1-Heptanol 111-71-7, Heptaldehyde

123-19-3, 4-Heptanone 591-78-6,
2-Hexanone 5989-27-5
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(compns. for control of **parasitic mites** of honey **bees** and other hive **pests**, contg.)

IT 7534-94-3, Isobornyl methacrylate 42978-66-5, Tripropyleneglycol diacrylate
RL: MOA (Modifier or additive use); USES (Uses)
(in compns. for control of **parasitic mites** of honey **bees** and other hive **pests**)

L7 ANSWER 5 OF 85 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
AN 2002-489749 [52] WPIDS
CR 2003-540076 [51]
DNC C2002-138996
TI Composition for attracting insect e.g. carpenter ants comprises a preconidial mycelium of an entomopathogenic fungal species.
DC C05 D16
IN STAMETS, P E; STAMETS, P
PA (STAM-I) STAMETS P; (STAM-I) STAMETS P E; (MYCO-N) MYCO PESTICIDES LLC
CYC 97
PI WO 2002028189 A2 20020411 (200252)* EN 133p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2001096679 A 20020415 (200254)
US 2002146394 A1 20021010 (200351) 45p
US 6660290 B1 20031209 (200381)
ADT WO 2002028189 A2 WO 2001-US31339 20011003; AU 2001096679 A AU 2001-96679 20011003; US 2002146394 A1 CIP of US 2000-678141 20001003, US 2001-969456 20011001; US 6660290 B1 US 2000-678141 20001003
FDT AU 2001096679 A Based on WO 2002028189
PRAI US 2001-969456 20011001; US 2000-678141 20001003; US 2001-678141 20011001
AB WO 200228189 A UPAB: 20031216
NOVELTY - A composition (I) comprises a preconidial mycelium (II) of an entomopathogenic fungal species (III).
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:
(1) preparation of (I) involving selecting (III) and cultivating (II) of (III) on a substrate;
(2) a lubricating and inoculating composition comprising a lubricating oil and an entomopathogenic fungal inoculant. The inoculant is (II), conidia and/or post-conidial mycelium;
(3) attracting insects by providing (II) to a targeted insect locus;
(4) controlling targeted insect by treating a locus of the insect with (II) to cause mortality among the targeted insects;
(5) controlling social insect **pests** comprising selecting (III) from Beauveria bassiana and/or Metarhizium anisopliae and placing (II) at the locus of the social insect **pests**, to achieve insect mortality; and
(6) a composition for attracting an insect comprising an extract of (II).
ACTIVITY - Insecticide; **Pesticide**.
No biological data given.
MECHANISM OF ACTION - None given.
No biological data given.
USE - For attracting social **pest** and beneficial insects

(particularly termites, ants, wasps and **bees**) e.g Camponotus carpenter ants, Calomyrmex, Opisthopsis, Polyrhachis ants, pharaoh ants, Argentine ants, pavement ants, odorous house ants, Atta, Acromyrmex leaf cutter ants, Coptotermes, Reticulitermes, Cryptotermes, Ahamitermes, Allodontermes, Amitermes, Anacanthotermes, Amitermitinae, Archotermopsis, Armitermes, Calcaritermes, Capritermes, Cornitermes, Cubitermes, Drepanotermes, Globitermes, Glyptotermes, Heterotermes, Hodotermes, Hodotermopsis, Incisitermes, Kalotermes, Labiotermes, Macrotermes, Macrotermitinae, Marginitermes, Mastotermes, Microcerotermes, Microhodotermes, Nasutitermes, Nasutitermitinae, Neotermes, Odontotermes, Ophiotermes, Parastylotermes, Paraneotermes, Parrhinotermes, Pericapritermes, Porotermes, Prorhinotermes, Psammotermes, Rhinotermes, Rhynchotermes, Rugitermes, Schedorhinotermes, Serritermes, Syntermes, Stolotermes, Termitogeton, Termes, Termitinae, Termopsis, Zootermopsis, Sphecoidea, Vespoidea wasps, Apoidea **bees**, Camponotus modoc, Camponotus vicinus, Camponotus ferrugineus, Camponotus floridanus, Camponotus pennsylvanicus, Camponotus herculeanus, Camponotus varigatus, Camponotus abdominalis, Camponotus noveboracensis, Solenopsis invicta, Solenopsis richteri, Monomorium pharonis, Coptotermes formosanus, Reticulitermes flavipes, Reticulitermes virginicus, Reticulitermes speratus, Reticulitermes hesperus, Reticulitermes tibialis, Reticulitermes lucifugus, Reticulitermes santonensis, Cryptotermes domesticus, C. cubioceps, Kalotermes flavicollis, Incisitermes minor, Mastotermes darwiniensis, bark, sap, wood-boring beetles (for e.g. mountain pine beetle, spruce beetle, red turpentine beetle, black turpentine beetle, southern pine beetle, Douglas fir beetle, engraver and Ips beetles and other sap beetles in the family Nitidulidae, powderpost beetles, false powderpost beetles, deathwatch beetles, oldhouse borers and/or Asian long-horned beetles), American, German, Surinam, brown-banded, smokybrown, Asian cockroaches, grasshoppers, locusts, crickets including mole cricket, Mormon crickets, beetles, beetle grubs, beetle larvae including Colorado potato beetle and other potato beetles, Mexican bean beetle, Japanese beetle, cereal leaf beetle, darkling beetle, pasture scarabs, Scarabaeidae, Gypsy moth, Gypsy moth larvae, diamondback moths, codling moth, Douglas fir tussock moth, western spruce budworm, grape berry moths, flies, fly larvae, large centipedes, shield centipedes, millipedes, European corn borers, Asiatic corn borers, velvetbean caterpillar, other caterpillars, larvae of the Lepidoptera, whiteflies, thrips, melon thrips, western flower thrips, aphids including Russian wheat aphid, spider **mites**, mealybugs including citrus mealybug, solanum mealybug, boll weevils, black vine weevils, European pecan weevils, mosquitoes, wasps, sweet potato whiteflies, silverleaf whiteflies, cotton fleahoppers, spittle bug, corn earworm, American bollworm, armyworms, fall armyworm, southern armyworm, beet armyworm, yellowstriped armyworm, black cutworm, tobacco hornworm, tobacco budworm, sugar cane froghopper, rice brown planthopper, earwigs, loopers including cabbage looper, soybean looper, forage looper, celery looper, cabbageworms, European cabbageworm, tomato pinworm, tomato hornworm, leafminers, cotton leafworm, corn rootworm, garden webworm, grape leaffolder, melonworm, pickleworm, achemon sphinx, sweetpotato hornworm, whitelined sphinx, lygus bugs, chinch bugs and false chinch bugs, sow bugs, pill bugs, citrus rust **mite**, pill wood lice, wheat cockchafer, white grubs, cockchafers, springtails, storage **pests** and/or soil insects, Isopoda, Diplopoda, Chilopoda, Symphyla, Thysanura, Collembola, Orthoptera, Dermaptera, Anoplura, Mallophaga, Thysanoptera, Heteroptera, Homoptera, Lepidoptera, Coleoptera, Diptera, Siphonaptera, Thysaoptera, **Acarina**, Arachnida (all claimed).

The substrate forms a protective covering for electrical cables and wires, computer cables, telephone wires, microwave equipment and/or optical networks. (II) is used as a prophylactic, preventative treatment.

ADVANTAGE - The compositions are environment friendly. The use of conidia germination for infection is avoided. (II) can be packaged in

spoilage proof or sealed packages. The composition acts as food and attractant and/or as an ingested or contact insecticide, palatable enough that the insects consume it even in the presence of competing food sources. The time and expense for raising conidial stage mycelium and/or separating conidia is avoided.
Dwg.0/3

AB . . .
by treating a locus of the insect with (II) to cause mortality among the targeted insects;
(5) controlling social insect **pests** comprising selecting (III) from Beauveria bassiana and/or Metarhizium anisopliae and placing (II) at the locus of the social insect **pests**, to achieve insect mortality; and
(6) a composition for attracting an insect comprising an extract of (II).
ACTIVITY - Insecticide; **Pesticide**.
No biological data given.
MECHANISM OF ACTION - None given.
No biological data given.
USE - For attracting social **pest** and beneficial insects (particularly termites, ants, wasps and **bees**) e.g Camponotus carpenter ants, Calomyrmex, Opisthopsis, Polyrhachis ants, pharaoh ants, Argentine ants, pavement ants, odorous house ants, Atta, Acromyrmex leaf. . . Pericapritermes, Porotermes, Prorhinotermes, Psammotermes, Rhinotermes, Rhynchotermes, Rugitermes, Schedorhinotermes, Serritermes, Syntermes, Stolotermes, Termitogeton, Termes, Termitinae, Termopsis, Zootermopsis, Sphecoidea, Vespoidea wasps, Apoidea **bees**, Camponotus modoc, Camponotus vicinus, Camponotus ferrugineus, Camponotus floridanus, Camponotus pennsylvanicus, Camponotus herculeanus, Camponotus varigatus, Camponotus abdominalis, Camponotus noveboracensis, Solenopsis invicta,. . . caterpillar, other caterpillars, larvae of the Lepidoptera, whiteflies, thrips, melon thrips, western flower thrips, aphids including Russian wheat aphid, spider **mites**, mealybugs including citrus mealybug, solanum mealybug, boll weevils, black vine weevils, European pecan weevils, mosquitoes, wasps, sweet potato whiteflies, silverleaf. . . achemon sphinx, sweetpotato hornworm, whitelined sphinx, lygus bugs, chinch bugs and false chinch bugs, sow bugs, pill bugs, citrus rust **mite**, pill wood lice, wheat cockchafer, white grubs, cockchafers, springtails, storage **pests** and/or soil insects, Isopoda, Diplopoda, Chilopoda, Symphyla, Thysanura, Collembola, Orthoptera, Dermaptera, Anoplura, Mallophaga, Thysanoptera, Heteroptera, Homoptera, Lepidoptera, Coleoptera, Diptera, Siphonaptera, Thysaoptera, **Acarina**, Arachnida (all claimed).
The substrate forms a protective covering for electrical cables and wires, computer cables, telephone wires, microwave. . .

TECH. . .
preconidial attractiveness to insects, slowness to sporulate, mycelial pathogenicity and virulence, lack of virulence and pathogenicity, host specificity for targeted **pest** insects, time to insect death, mortality rate for pathogenic and virulent strains, low mortality rate of non-targeted insects, the proportion. . . pheromones, aggregating pheromones, trail pheromones, encapsulating materials, yeast and/or bacteria.
Preferred Components: (III) is an attractant to both a target **pest** insect and an insect predator of the target **pest** insect, and virulent only to the targeted **pest** insect. The substrate is a solid substrate e.g. wood, bait trap, grains, seeds, paper products, cardboard, sawdust, corn cobs, cornstalks,. . . targeted insect and/or pupae or larvae size of a targeted insect. The biological control agents are microbial pathogens, predator insects, **parasitic** insects, beneficial nematodes, spiders, beneficial **mites** or birds.
Preferred Fungal Species: (III) is derived from a genetically modified

fungal species. The strain of (III) does not. . . methanol, ethanol, isopropanol, n-propanol, n-butanol, 2-butanol, 2-methyl-1-propanol, ethylene glycol, glycerol, benzene, cyclohexane, cyclopentane, methylcyclohexane, pentanes, hexanes, heptanes, 2,2,4-trimethylpentane, toluene, xylenes, **acetone, 2-butanone**, 3-pentanone, 4-methyl-**2-pentanone**, t-butyl methyl ether, 1,4-dioxane, diethyl ether, tetrahydrofuran, methyl formate, ethyl acetate and butyl acetate, acetonitrile, proprionitrile, benzonitrile, formamide, N,N dimethylformamide,. . . is a masking agent for a chemical control agent.
Preferred Components: The chemical control agents are insect toxicants, poisons, regulators, **pesticides**, semiochemicals and sublethal doses of insect toxicants, poisons, regulators and **pesticides**.
The lubricating oil (IV) is petroleum, mineral oil, synthetic, semi-synthetic, biodegradable, vegetable oil, modified vegetable oil and/or animal lubricants or. . .

L7 ANSWER 6 OF 85 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
AN 2003-540076 [51] WPIDS
CR 2002-489749 [52]
DNC C2003-146338
TI Composition useful for controlling insect e.g. termites comprises a preconidial mycelium of an entomopathogenic fungal species.
DC C05 F06 F09
IN STAMETS, P E
PA (STAM-I) STAMETS P E
CYC 1
PI US 2002146394 A1 20021010 (200351)* 45p
ADT US 2002146394 A1 CIP of US 2000-678141 20001003, US 2001-969456 20011001
PRAI US 2001-969456 20011001; US 2000-678141 20001003
AB US2002146394 A UPAB: 20030808
NOVELTY - A composition comprises a preconidial mycelium of an entomopathogenic fungal species.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:
(1) preparation of an insect attractant involving selection of the entomopathogenic fungal species having the preconidial mycelium that attracts an insect and cultivation of the preconidial mycelium on a substrate;
(2) a composition for attracting insects comprising a pre-sporulation fungal mycelium on grain; and
(3) a lubricating and inoculating composition comprising a lubricating oil and an entomopathogenic fungal inoculant selected from preconidial mycelium, conidia and/or post-conidial mycelium.
ACTIVITY - Insect attractant.
Colony fragments of 100 Solenopsis invicta red imported fire ants per standard plastic box test area were established with moistened soil and preconidial mycelium. Three drops of water were added to the soil daily to maintain a humid medium amenable to ant activity and fungal growth. Beauverai bassiana preconidial mycelium on rice were utilized as test strains. There were three replicates of each test strain and a control arena. Test arena portions of the preconidial mycelium were removed readily from the feeding dishes by the ants and scattered over the area floors. Ants also readily moved into and created gallery-like tunnels in the preconidial mycelium on rice in the feeding dishes. % Mortality for fire ants using the test strain and the control arena was 89 and 66.33 at 21 days respectively.
MECHANISM OF ACTION - None given.
USE - For attracting insect including a social **pest** insect or beneficial insect e.g. termites (including Formosan termites, reticulated termites and Isoptera termites including Coptotermes, Reticulitermes, Cryptotermes, Ahamitermes, Allodontermes, Amitermes,

Anacanthotermes, Amitermitinae, Archotermopsis, Armitermes, Calcaritermes, Capritermes, Cornitermes, Cubitermes, Drepanotermes, Globitermes, Glyptotermes, Heterotermes, Hodotermes, Hodotermopsis, Incisitermes, Kalotermes, Labiotermes, Macrotermes, Macrotermitinae, Marginitermes, Mastotermes, Microcerotermes, Microhodotermes, Nasutitermes, Nasutitermitinae, Neotermes, Odontotermes, Ophiotermes, Parastylotermes, Paraneotermes, Parrhinotermes, Pericapritermes, Porotermes, Prorhinotermes, Psammotermes, Rhinotermes, Rhynchotermes, Rugitermes, Schedorhinotermes, Serritermes, Syntermes, Stolotermes, Termitogeton, Termes, Termitinae, Termopsis and Zootermopsis), ants (carpenter ants and fire ants, Formicidae ants including Camponotus carpenter ants, Calomyrmex, Opisthopsis and Polyrhachis ants, pharaoh ants, Argentine ants, pavement ants, odorous house ants and Atta and Acromyrmex leaf cutter ants), wasps (including Sphecoidea and Vespoidea wasps) and **bees** (e.g. Apoidea **bees**), Camponotus madoc, Camponotus vicinus, Camponotus ferrugineus, Camponotus floridanus, Camponotus pennsylvanicus, Camponotus herculeanus, Camponotus varigatus, Camponotus abdominalis and Camponotus noveboracensis, Solenopsis invicta, Solenopsis ichteri, Monomorium pharonis, Coptotermes formosanus, Reticulitermes flauipes, Reticulitermes virginicus, Reticulitermes speratus, Reticulitermes hesperus, Reticulitermes tibialis, Reticulitermes lucifugus, Reticulitermes santonensis, Cryptotermes domesticus, C. cubioceps, Kalotermes flavicollis, Incisitermes minor and Mastotermes darwiniensis, bark, sap and wood-boring beetles (including mountain pine beetle, spruce beetle, red turpentine beetle, black turpentine beetle, southern pine beetle, Douglas fir beetle, engraver and Ips beetles and other sap beetles in the family Nitidulidae, powderpost beetles, false powderpost beetles, deathwatch beetles, oldhouse borers and Asian long-horned beetles), cockroaches (including American, German, Surinam, brown-banded, smokybrown, and Asian cockroaches), grasshoppers, locusts, crickets (including mole cricket, Mormon crickets), beetles, beetle grubs and beetle larvae including Colorado potato beetle and other potato beetles, Mexican bean beetle, Japanese beetle, cereal leaf beetle, darkling beetle and pasture scarabs and other Scarabaeidae, Gypsy moths and Gypsy moth larvae, diamondback moths, codling moth, Douglas fir tussock moth, western spruce budworm, grape berry moths, flies and fly larvae, large centipedes, shield centipedes, millipedes, European corn borers, Asiatic corn borers, velvetbean caterpillar and other caterpillars and larvae of the Lepidoptera, whiteflies, thrips, melon thrips, western flower thrips, aphids including Russian wheat aphid, spider **mites** , mealybugs including citrus mealybug and solanum mealybug, boll weevils, black vine weevils, European pecan weevils, mosquitoes, wasps, sweet potato whiteflies, silverleaf whiteflies, cotton fleahoppers, spittle bug, corn earworm, American bollworm, armyworms, fall armyworm, southern armyworm, beet armyworm, yellowstriped armyworm, black cutworm, tobacco hornworm, tobacco budworm, sugar cane froghopper, rice brown planthopper, earwigs, loopers including cabbage looper, soybean looper, forage looper and celery looper, cabbageworms including the imported cabbageworm and the European cabbageworm, tomato pinworm, tomato hornworm, leafminers, cotton leafworm, corn rootworm, garden webworm, grape leaffolder, melonworm, pickleworm, achemon sphinx, sweetpotato hornworm, white lined sphinx, lygus bugs, chinch bugs and false chinch bugs, sow bugs, pill bugs, citrus rust **mite**, pill wood lice, wheat cockchafer, white grubs and cockchafers, springtails, storage **pests** and soil insects, Isopoda, Diplopoda, Chilopoda, Symphyla, Thysanura, Collembola, Orthoptera, Dermaptera, Anoplura, Mallophaga, Thysanoptera, Heteroptera, Homoptera, Lepidoptera, Coleoptera, Diptera, Siphonaptera, Thysanoptera, **Acarina** and Arachnida (all claimed).

ADVANTAGE - The preconidial mycelium is an attractant to both a targeted **pest** insect and an insect predator of the targeted **pest** insect and virulent only to the targeted **pest** insect; enhances the effectiveness of entomopathogenic fungal biopesticide

products and enhances the attractiveness of such fungal **pesticides** to insects; can act as a uniquely enticing insect food composition capable of inducing novel behaviors in the social insects including grazing on and house-keeping in preconidial mycelium and scattering of the preconidial mycelium around feeding areas and nesting chambers.
Dwg.1/3

AB . . .
at 21 days respectively.
MECHANISM OF ACTION - None given.
USE - For attracting insect including a social **pest** insect or beneficial insect e.g. termites (including Formosan termites, reticulated termites and Isoptera termites including Coptotermes, Reticulitermes, Cryptotermes, Ahamitermes, Allodontermes,. . . ants, pavement ants, odorous house ants and Atta and Acromyrmex leaf cutter ants), wasps (including Sphecoidea and Vespoidea wasps) and **bees** (e.g. Apoidea **bees**), Camponotus madoc, Camponotus vicinus, Camponotus ferrugineus, Camponotus floridanus, Camponotus pennsylvanicus, Camponotus herculeanus, Camponotus varigatus, Camponotus abdominalis and Camponotus noveboracensis, Solenopsis. . . other caterpillars and larvae of the Lepidoptera, whiteflies, thrips, melon thrips, western flower thrips, aphids including Russian wheat aphid, spider **mites**, mealybugs including citrus mealybug and solanum mealybug, boll weevils, black vine weevils, European pecan weevils, mosquitoes, wasps, sweet potato whiteflies,. . . sphinx, sweetpotato hornworm, white lined sphinx, lygus bugs, chinch bugs and false chinch bugs, sow bugs, pill bugs, citrus rust **mite**, pill wood lice, wheat cockchafer, white grubs and cockchafers, springtails, storage **pests** and soil insects, Isopoda, Diplopoda, Chilopoda, Symphyla, Thysanura, Collembola, Orthoptera, Dermaptera, Anoplura, Mallophaga, Thysanoptera, Heteroptera, Homoptera, Lepidoptera, Coleoptera, Diptera, Siphonaptera, Thysanoptera, **Acarina** and Arachnida (all claimed).
ADVANTAGE - The preconidial mycelium is an attractant to both a targeted **pest** insect and an insect predator of the targeted **pest** insect and virulent only to the targeted **pest** insect; enhances the effectiveness of entomopathogenic fungal biopesticide products and enhances the attractiveness of such fungal **pesticides** to insects; can act as a uniquely enticing insect food composition capable of inducing novel behaviors in the social insects. . .

TECH. . . .
preconidial attractiveness to insects, slowness to sporulate, mycelial pathogenicity and virulence, lack of virulence and pathogenicity, host specificity for targeted **pest** insects, time to insect death, mortality rate for pathogenic and virulent strains, low mortality rate of non-targeted insects, the proportion. . . is biological control agent, chemical control agent, and/or physical control agent. The biological control agent is microbial pathogen, predator insect, **parasitic** insect, beneficial nematode, spider, beneficial **mite** and bird. The chemical control agent is insect toxicant, poison, regulator, **pesticide** and semiochemical and sub-lethal doses of insect toxicant, poison, regulator and **pesticide**. The lubricating oil is petroleum and mineral oil lubricants, synthetic lubricant, semi-synthetic lubricant, biodegradable lubricant, vegetable oil lubricant, modified vegetable. . . Preferred Component: The attractant extract is prepared with a solvent selected from water including steam, alcohols, organic solvents (e.g. methanol, **acetone**) and/or carbon dioxide, or a polar solvent. The attractant extract is a masking agent for a chemical control agent.

L7 ANSWER 7 OF 85 CROPU
AN 2003-80724 CROPU C G I
TI Method useful in the control of **parasitic mites** and hive invading **pests** of honey **bees**, comprises

application of a specified ketone, 1-heptanol, ethyl butyrate, benzaldehyde, heptaldehyde or d-limonene.

IN Erickson E H; Degrandi-Hoffman G; Becker C G; Whitson R S; Deeby T A

PA US-Sec.Army; Cerexagri

LO King of Prussia, Pa., USA

PI WO 2002067914 A1 20020906

AI US 2001-272097P 20010228
US 2002-272097 20020227
WO 2002-US5986 20020228

DT Patent

LA English

OS WPI: 2002-740718

FA AB; LA; CT

AB A method of controlling **parasitic mites** of honey **bees** (**Apis** mellifera) is claimed, comprising application of a specified ketone (I: especially **2-heptanone** (2H)), 1-heptanol, ethyl butyrate, benzaldehyde, heptaldehyde or d-limonene. A typical formulation was a slow-release oil-gelled composition containing 10% 2H and 90% gelled mineral oil (Versagel C HP). In an example, **mites** (**Varroa** jacobsoni) were placed in petri dishes containing 40 ul 2H in the lid; fluvalinate (Apistan) was used as comparison. Within 2 hr, the **mites** were all dead, while no mortality was seen in controls. The composition had no ill effect on **bees** (composition of queen's court, oviposition). It is also claimed to be useful for controlling hive invading **pests**, especially greater wax moth (Galleria mellonella), lesser wax moth (Achroia grisella), small hive beetle (Aethina tunida), ants or Tropilaelaps.

TI Method useful in the control of **parasitic mites** and hive invading **pests** of honey **bees**, comprises application of a specified ketone, 1-heptanol, ethyl butyrate, benzaldehyde, heptaldehyde or d-limonene.

AB A method of controlling **parasitic mites** of honey **bees** (**Apis** mellifera) is claimed, comprising application of a specified ketone (I: especially **2-heptanone** (2H)), 1-heptanol, ethyl butyrate, benzaldehyde, heptaldehyde or d-limonene. A typical formulation was a slow-release oil-gelled composition containing 10% 2H and 90% gelled mineral oil (Versagel C HP). In an example, **mites** (**Varroa** jacobsoni) were placed in petri dishes containing 40 ul 2H in the lid; fluvalinate (Apistan) was used as comparison. Within 2 hr, the **mites** were all dead, while no mortality was seen in controls. The composition had no ill effect on **bees** (composition of queen's court, oviposition). It is also claimed to be useful for controlling hive invading **pests**, especially greater wax moth (Galleria mellonella), lesser wax moth (Achroia grisella), small hive beetle (Aethina tunida), ants or Tropilaelaps.

ABEX. . . . or y = 1 and x = 3; or y = 2 and x = 2. Also claimed are: an **acaricidal** composition for controlling **parasitic mites** of honey **bees** comprising a dispenser which provides the active compound; an attractant composition for attracting **parasitic mites** of honey **bees** comprising a dispenser providing 2H; a trapping system for controlling **parasitic mites** of honey **bees** comprising a trap and a dispenser containing 2H; and a composition for controlling hive invading **pests** of honey **bees** comprising a dispenser containing 2H. The agent either kills **mites**, incapacitates them (such as disrupting neural or other physiological functions to prevent essential **mite** functions or reproduction), or renders them sufficiently impaired to be trapped, drowned, isolated or otherwise removed from an area. 2H also acts as an attractant for **Varroa mites**.

CT HEPTANONE-2 *TR; **VARROA *TR**; JACOBSONI *TR; **BEE *TR**
; VARROIDAE *TR; **ACARINA *TR**; FLUVALINATE *RC;
TAU-FLUVALINATE *RC; APISTAN *RC; HEPTANON2 *RN; **ACARICIDE *FT**
; **ACARICIDES *FT**; OIL *FT; GEL *FT; COMB.ADDITIVE *FT;
VERSAGEL-C-HP *FT; BIOASSAY *FT; DOSAGE *FT; IN-VITRO *FT; FORMULATION
*FT; ALARM-PHEROMONES *FT; INSECT-REPELLENTS. . .

L7 ANSWER 8 OF 85 CABA COPYRIGHT 2004 CABI on STN
AN 2003:120092 CABA
DN 20033076220
TI Laboratory evaluation of some plant essences to control **Varroa**
destructor (**Acari**: Varroidae)
AU Ardeshir Ariana; Rahim Ebadi; Gholamhosein Tahmasebi
CS College of Agriculture, Isfahan University of Technology, 84154 Isfahan,
Iran. ebadir@cc.iut.ac.ir
SO Experimental and Applied Acarology, (2002) Vol. 27, No. 4, pp. 319-327. 21
ref.
Publisher: Kluwer Academic Publishers. Dordrecht
ISSN: 0168-8162
DOI: 10.1023/A:1023342118549
CY Netherlands Antilles
DT Journal
LA English
ED Entered STN: 20030812
Last Updated on STN: 20040216
AB This research was conducted to evaluate **acaricidal** effects of
some plant essences on **Varroa mites** and the
possibility of their usage for **Varroa** control. First, live
Varroa mites were obtained from adult **honeybees**
with CO2 in a newly designed apparatus. Thyme, savory, rosemary, marjoram,
dillsun [Anethum graveolens] and lavender essences at concentrations of 2
and 1 g/100 g (w/w), caused a **mite** mortality rate of more than
97% and 95%, respectively. Also spearmint at 2 g/100 g was able to kill
more than 97% of **Varroa mites**. When sprayed on worker
honeybees infected with **mites**, thyme, savory, spearmint
[Mentha spicata] and dillsun essences at 2 g/100 g (w/w) caused 43-58%
Varroa mortality. Toxicity of thyme, savory and spearmint essences
for worker **honeybees** was not significantly different from that
of controls (**acetone** and water), but dillsun essence caused 12%
honeybee mortality. These results showed that essences of thyme,
savory and spearmint have **acaricidal** properties that could be
used for controlling **Varroa** in **honeybee** colonies.
TI Laboratory evaluation of some plant essences to control **Varroa**
destructor (**Acari**: Varroidae).
AB This research was conducted to evaluate **acaricidal** effects of
some plant essences on **Varroa mites** and the
possibility of their usage for **Varroa** control. First, live
Varroa mites were obtained from adult **honeybees**
with CO2 in a newly designed apparatus. Thyme, savory, rosemary, marjoram,
dillsun [Anethum graveolens] and lavender essences at concentrations of 2
and 1 g/100 g (w/w), caused a **mite** mortality rate of more than
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[Mentha spicata] and dillsun essences at 2 g/100 g (w/w) caused 43-58%
Varroa mortality. Toxicity of thyme, savory and spearmint essences
for worker **honeybees** was not significantly different from that
of controls (**acetone** and water), but dillsun essence caused 12%
honeybee mortality. These results showed that essences of thyme,
savory and spearmint have **acaricidal** properties that could be
used for controlling **Varroa** in **honeybee** colonies.
BT Anethum; Apiaceae; Apiales; dicotyledons; angiosperms; Spermatophyta;

plants; **Apis**; Apidae; Hymenoptera; insects; arthropods;
invertebrates; animals; Mentha; Lamiaceae; Lamiales; Origanum; Rosmarinus;
Thymus; Varroidae; Mesostigmata; **mites**; **Acari**;
Arachnida

CT **acaricidal** properties; botanical **pesticides**; chemical control; dill; evaluation; honey **bees**; mortality; **parasites**; **pest** control; rosemary

ST savory; **Varroa** destructor

ORGN Anethum graveolens; **Apis** mellifera; Mentha spicata; Origanum vulgare; Rosmarinus officinalis; Satureja; Thymus vulgaris; **Varroa**

L7 ANSWER 9 OF 85 CABA COPYRIGHT 2004 CABI on STN

AN 2003:84827 CABA

DN 20033044612

TI Laboratory and field evaluation of floral odours from African marigold, Tagetes erecta, and sweet pea, Lathyrus odoratus, as kairomones for the cotton bollworm Helicoverpa armigera

AU Bruce, T. J.; Cork, A.; Hall, D. R.; Dunkelblum, E.; Witzgall, P. [EDITOR]; Mazomenos, B. [EDITOR]; Konstantopoulou, M. [EDITOR]

CS Natural Resources Institute, Chatham Maritime, ME4 4TB Kent, UK.

SO Bulletin OILB/SROP, (2002) Vol. 25, No. 9, pp. 315-322. 17 ref.
Publisher: International Organization for Biological and Integrated Control of Noxious Animals and Plants (OIBC/OILB), West Palaearctic Regional Section (WPRS/SROP). Dijon
Price: Journal article; Conference paper .
Meeting Info.: IOBC/WPRS Working Group 'Use of Pheromones and Other Semiochemicals in Integrated Control'. Pheromones and other biological techniques for insect control in orchards and vineyards. Proceedings of the working group meeting, Samos, Greece, September 25-29, 2000.

CY France

DT Journal

LA English

ED Entered STN: 20030606
Last Updated on STN: 20030606

AB Significant increases in upwind flight of H. armigera in a wind-tunnel were obtained with air entrained with headspace samples of African marigold (Tagetes erecta) flowers (P=0.014), sweet pea and Lathyrus odoratus flowers (P=0.047). Analysis of the compounds contained in the Porapak Q extracts was carried out by GC-MS. Direct EAG was used to screen for the most electrophysiologically active natural extracts and GC-EAG was used in screening for compounds to test in the wind-tunnel. Two 4-component synthetic kairomonal blends were identified which significantly increased the upwind flight in the wind-tunnel (P<0.001 and P=0.014 for marigold and sweet pea blends, respectively). In a field experiment conducted in Israel, funnel traps baited with floral odours were tested for their ability to trap H. armigera and other insects. Significantly more H. armigera, noctuid **pests** (Autographa gamma), honey **bees** (**Apis** spp.), wasps (Halictus spp.) and lacewings (Chrysopidae) were caught in traps baited with synthetic marigold, sweet pea and L. odoratus, floral volatiles than in unbaited control traps. The marigold blend contained benzaldehyde, ([plusmn])-linalool, phenylacetaldehyde and (S)-(-)-limonene, whereas the sweet pea blend contained (-)-linalool, phenylacetaldehyde, benzyl alcohol and diacetone (4-hydroxy-4-methyl-**2-pentanone**) in the natural ratio. Although the target specificity and level of attraction obtained with the floral traps was too low for mass trapping, the floral traps could possibly be used for monitoring female H. armigera populations. These findings are discussed in relation to the potential use of floral kairomones in the integrated control of H. armigera.

AB . . . with floral odours were tested for their ability to trap H. armigera and other insects. Significantly more H. armigera, noctuid **pests** (Autographa gamma), honey **bees** (**Apis**

spp.), wasps (Halictus spp.) and lacewings (Chrysopidae) were caught in traps baited with synthetic marigold, sweet pea and L. odoratus,. . . marigold blend contained benzaldehyde, ([plusmn])-linalool, phenylacetaldehyde and (S)-(-)-limonene, whereas the sweet pea blend contained (-)-linalool, phenylacetaldehyde, benzyl alcohol and diacetone (4-hydroxy-4-methyl-**2-pentanone**) in the natural ratio. Although the target specificity and level of attraction obtained with the floral traps was too low. . .

CT benzaldehyde; benzyl alcohol; chemical composition; cotton; insect control; insect **pests**; integrated control; kairomones; limonene; linalool; peas; **pest** control; plant composition; plant **pests**; sweet peas; trapping

ORGN **Apis**; Autographa gamma; Chrysopidae; Gossypium; Halictus; Helicoverpa armigera; insects; Lathyrus odoratus; Pisum sativum; Tagetes erecta

L7 ANSWER 10 OF 85 CROPU COPYRIGHT 2004 THOMSON DERWENT on STN

AN 2003-80815 CROPU A I

TI Simple method for the determination of trace levels of **pesticides** in **honeybees** using matrix solid-phase dispersion and gas chromatography.

AU Morzycka B

CS Inst.Plant-Prot.Poznan

LO Bialystok, Pol.

SO J.Chromatogr. (982, No. 2, 267-73, 2002)
CODEN: JOCRAM

DT Journal

LA English

FA AB; LA; CT

AB The development of a simple multiresidue method, using matrix solid-phase dispersion and GC analysis, for the determination of 12 insecticides in **honeybees** was reported. The following insecticides, used on flowering fields, were studied: azinphos-methyl, buprofezin, chlorpyrifos-methyl, chlorpyrifos, diazinon, ethion, fenitrothion, fipronil, methidathion, phosalone, pirimicarb and propoxur. The method used activated Florisil or silica as dispersing agents in conjunction with activated silica or alumina column cleanup. After clean-up, extracts were analysed by capillary GC/NPD analysis. Good recoveries (70-110%) were obtained for samples spiked at 0.01-1.0 mg/kg; detection limits were 0.005-0.05 mg/kg. The method was suitable for the analysis of residues of low and medium polarity **pesticides** in **honeybee** samples.

TI Simple method for the determination of trace levels of **pesticides** in **honeybees** using matrix solid-phase dispersion and gas chromatography.

AB. . . development of a simple multiresidue method, using matrix solid-phase dispersion and GC analysis, for the determination of 12 insecticides in **honeybees** was reported. The following insecticides, used on flowering fields, were studied: azinphos-methyl, buprofezin, chlorpyrifos-methyl, chlorpyrifos, diazinon, ethion, fenitrothion, fipronil, methidathion,. . . mg/kg; detection limits were 0.005-0.05 mg/kg. The method was suitable for the analysis of residues of low and medium polarity **pesticides** in **honeybee** samples.

ABEX **Honeybee** samples were homogenized with activated Florisil or silica as dispersing agents, before activated silica or alumina column cleanup using n-hexane/Et2O and n-hexane/EtOAc as eluents. The combined fractions were evaporated to low volume, and dissolved in n-hexane/ **acetone** before quantification by capillary GC/NPD analysis (HP-1 column).

CT **BEE *OC; APIS *OC**; APIDAE *OC; HYMENOPTERA *OC;
MATRIX *FT; SOLID *FT; PHASE *FT; DISPERSION *FT; GLC *FT;

MULTIRESIDUE *FT; METHOD *FT; DEVELOPMENT. . . SAMPLE *FT; RECOVERY *FT; QUANT. *FT; DET. *FT; CHROMATOGRAPHY *FT; ANALYSIS *FT; EXTRACTION *FT; AZINPHOS-METHYL *OC; AZINPHOSM *RN; INSECTICIDES *FT; **ACARICIDES *FT**; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; OC *FT; BUPROFEZIN *OC; BUPROFEZI *RN; CHLORPYRIFOS-METHYL *OC; CHLORPYME *RN; CONTACTS *FT; FUMIGANTS *FT; STOMACH-POISONS. . .

L7 ANSWER 11 OF 85 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 3
AN 2002:391062 CAPLUS
DN 136:365150
TI Effects of acute sublethal exposure to coumaphos or diazinon on acquisition and discrimination of odor stimuli in the honey **bee** (Hymenoptera: Apidae)
AU Weick, Jason; Thorn, Robert S.
CS Department of Biology, Denison University, Granville, OH, 43203, USA
SO Journal of Economic Entomology (2002), 95(2), 227-236
CODEN: JEENAI; ISSN: 0022-0493
PB Entomological Society of America
DT Journal
LA English
AB Two organophosphate compds., coumaphos and diazinon, were examd. for effects of sublethal exposure on odor learning and generalization in honey **bees, Apis** mellifera. Using proboscis extension response training as a measure of odor learning and discrimination, a series of two expts. tested whether these compds. would inhibit **bees** from learning a new odor or discriminating between different odors. **Bees** were exposed to coumaphos or diazinon in **acetone** applied to the thorax, or to coumaphos or diazinon in hexane injected intracranially. At no dose tested or exposure method used was coumaphos shown to inhibit acquisition of a novel odor stimulus, although it was shown to slightly reduce discriminatory ability when given by intracranial injection. Diazinon had effects on odor learning at several small doses, and a small injected dose was shown to significantly inhibit learning of an odor stimulus paired with a sucrose reward. When **bee** head acetylcholinesterase activity was measured after dermal applications of both **pesticides**, only the higher doses of diazinon showed reduced activity, indicating that externally-applied coumaphos shows no significant effect on **bee** brain acetylcholinesterase activity. These data suggest that acute application of coumaphos has only slight nonlethal effects upon the behavior of honey **bees** and should have little effect upon **bee** tasks that involve odor learning.
RE.CNT 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT
TI Effects of acute sublethal exposure to coumaphos or diazinon on acquisition and discrimination of odor stimuli in the honey **bee** (Hymenoptera: Apidae)
AB Two organophosphate compds., coumaphos and diazinon, were examd. for effects of sublethal exposure on odor learning and generalization in honey **bees, Apis** mellifera. Using proboscis extension response training as a measure of odor learning and discrimination, a series of two expts. tested whether these compds. would inhibit **bees** from learning a new odor or discriminating between different odors. **Bees** were exposed to coumaphos or diazinon in **acetone** applied to the thorax, or to coumaphos or diazinon in hexane injected intracranially. At no dose tested or exposure method used was coumaphos shown to inhibit acquisition of a novel odor stimulus, although it was shown to slightly reduce discriminatory ability when given by intracranial injection. Diazinon had effects on odor learning at several small doses, and a small injected dose was shown to significantly inhibit learning of an odor stimulus paired with a sucrose reward. When **bee** head acetylcholinesterase activity was measured after dermal

applications of both **pesticides**, only the higher doses of
diazinon showed reduced activity, indicating that externally-applied
coumaphos shows no significant effect on **bee** brain
acetylcholinesterase activity. These data suggest that acute application
of coumaphos has only slight nonlethal effects upon the behavior of honey
bees and should have little effect upon **bee** tasks that
involve odor learning.

ST coumaphos diazinon odor discrimination honey **bee**; **Apis**
coumaphos diazinon odor discrimination

IT Brain
(acetylcholinesterase; effects of acute sublethal exposure to coumaphos
or diazinon on acquisition and discrimination of odor stimuli in honey
bee)

IT **Honeybee**
(effects of acute sublethal exposure to coumaphos or diazinon on
acquisition and discrimination of odor stimuli in honey **bee**)

IT Behavior
(odor-discriminating; effects of acute sublethal exposure to coumaphos
or diazinon on acquisition and discrimination of odor stimuli in honey
bee)

IT Learning
(odor; effects of acute sublethal exposure to coumaphos or diazinon on
acquisition and discrimination of odor stimuli in honey **bee**)

IT 56-72-4, Coumaphos 333-41-5, Diazinon
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(effects of acute sublethal exposure to coumaphos or diazinon on
acquisition and discrimination of odor stimuli in honey **bee**)

IT 9000-81-1, Acetylcholinesterase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(effects of acute sublethal exposure to coumaphos or diazinon on
acquisition and discrimination of odor stimuli in honey **bee**)

L7 ANSWER 12 OF 85 CAPLUS

AN 2002:660389 CAPLUS

DN 138:200301

TI Notes and comments: **2-heptanone** as a repellent for
Apis florea

AU Naik, D. G.; Banhatti, Padmini; Chadawa, S. S.; Thomas, Daisy

CS Chemistry Group, Agharkar Research Institute, Pune, 411 004, India

SO Journal of Apicultural Research (2002), 41(1-2), 59-61
CODEN: JACRAQ; ISSN: 0021-8839

PB International Bee Research Association

DT Journal

LA English

AB The repellency of **2-heptanone**, a consituent of a
mandibular gland pheromone of **Apis** mellifera and Trigona
gribidoi, to **Apis** florea was examd. using formulations in liq.
paraffin by the method standardized for A. cerana. A bioassay was
performed using different concns. of **2-heptanone** in
liq. paraffin. The repellent character was obsd. at very low **2-heptanone** concns. The repellent behavior of the formulation
increased with an increase in concn. up to 230 .mu.l/mL **2-heptanone** in liq. paraffin. Repellency remained const. for the
higher concns. including pure **2-heptanone**. **2-Heptanone** is not phytotoxic and can be used to repell
honeybees from areas subjected to the use of **pesticides**.

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Notes and comments: **2-heptanone** as a repellent for
Apis florea

AB The repellency of **2-heptanone**, a consituent of a
mandibular gland pheromone of **Apis** mellifera and Trigona

gribidoi, to **Apis** florea was examd. using formulations in liq. paraffin by the method standardized for A. cerana. A bioassay was performed using different concns. of **2-heptanone** in liq. paraffin. The repellent character was obsd. at very low **2-heptanone** concns. The repellent behavior of the formulation increased with an increase in concn. up to 230 .mu.l/mL **2-heptanone** in liq. paraffin. Repellency remained const. for the higher concns. including pure **2-heptanone**. **2-Heptanone** is not phytotoxic and can be used to repell **honeybees** from areas subjected to the use of **pesticides**.

ST heptanone repellent **Apis**

IT **Honeybee** (**Apis** florea)
   (repellency of **2-heptanone** for)

IT Insect repellents
   (repellency of **2-heptanone** for **Apis** florea)

IT **110-43-0, 2-Heptanone**
RL: AGR (Agricultural use); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)
   (repellency for **Apis** florea)

L7 ANSWER 13 OF 85 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN

AN 2001-298906 [31] WPIDS

DNC C2001-091851

TI Protecting beneficial insects, especially **bees**, from damage caused by **parasitic mites** comprises applying tebufenpyrad to the insects or their brood chamber or habitat.

DC B03 C02

IN BAUMBACH, W R; BELUCH, M P; BLACK, B C

PA (AMCY) AMERICAN CYANAMID CO

CYC 1

PI US 6204283 B1 20010320 (200131)* 3p

ADT US 6204283 B1 Provisional US 1998-92773P 19980714, US 1999-351222 19990712

PRAI US 1998-92773P 19980714; US 1999-351222 19990712

AB US 6204283 B UPAB: 20010607

NOVELTY - Method for protecting beneficial insects from damage caused by **parasitic mites** selected from **Varroa** jacobsoni, **Acarapis** woodi and Tropilaelaps clareae comprises applying tebufenpyrad (I; N-(4-t-butylbenzyl)-4-chloro-3-ethyl-1-methylpyrazole-5-carboxamide) to the insects or their brood chamber or habitat.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a method for controlling **parasitic mites** selected from **Varroa** jacobsoni, **Acarapis** woodi and Tropilaelaps clareae in the presence of beneficial insects, comprising contacting the **mites** or their brood chamber or habitat with (I).

USE - The method is useful for protecting **bees** of the family **Apinae, Bombinae** and **Euglossinae**, especially **honeybees** (**Apis** mellifera).

ADVANTAGE - (I) is more toxic to the **mites** than it is to **honeybees**. **Honeybees** taken from hives that were 70-90% infested with **Varroa** jacobsoni were immobilized by chilling and treated by applying a droplet of an **acetone** solution of (I) to the dorsal abdomen. The **bees** were placed in an incubator at 31 deg. C and fed 50% sugar water ad libitum for 5 days. At doses of 0, 0.006, 0.06 and 0.6 micro g (I) per **bee**, the **mite** mortality was 0, 58, 44 and 92%, respectively, and the **bee** mortality was 14, 24, 25 and 28%, respectively.

Dwg.0/0

TI Protecting beneficial insects, especially **bees**, from damage caused by **parasitic mites** comprises applying tebufenpyrad to the insects or their brood chamber or habitat.

AB US 6204283 UPAB: 20010607
NOVELTY - Method for protecting beneficial insects from damage caused by **parasitic mites** selected from **Varroa** jacobsoni, **Acarapis** woodi and Tropilaelaps clareae comprises applying tebufenpyrad (I; N-(4-t-butylbenzyl)-4-chloro-3-ethyl-1-methylpyrazole-5-carboxamide) to the insects or their brood chamber or habitat.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a method for controlling **parasitic mites** selected from **Varroa** jacobsoni, **Acarapis** woodi and Tropilaelaps clareae in the presence of beneficial insects, comprising contacting the **mites** or their brood chamber or habitat with (I).

USE - The method is useful for protecting **bees** of the family **Apinae, Bombinae** and **Euglossinae,** especially **honeybees** (**Apis** mellifera).

ADVANTAGE - (I) is more toxic to the **mites** than it is to **honeybees. Honeybees** taken from hives that were 70-90% infested with **Varroa** jacobsoni were immobilized by chilling and treated by applying a droplet of an **acetone** solution of (I) to the dorsal abdomen. The **bees** were placed in an incubator at 31 deg. C and fed 50% sugar water ad libitum for 5 days. At doses of 0, 0.006, 0.06 and 0.6 micro g (I) per **bee,** the **mite** mortality was 0, 58, 44 and 92%, respectively, and the **bee** mortality was 14, 24, 25 and 28%, respectively.
Dwg.0/0

TT TT: PROTECT BENEFICIAL INSECT **BEE** DAMAGE CAUSE **PARASITIC MITE** COMPRISE APPLY INSECT BROOD CHAMBER HABITAT.

L7 ANSWER 14 OF 85 CROPU COPYRIGHT 2004 THOMSON DERWENT on STN
AN 2001-85479 CROPU I G
TI Protecting beneficial insects, especially **bees,** from damage caused by **parasitic mites** comprises applying tebufenpyrad to the insects or their brood chamber or habitat.
IN Black B C; Baumbach W R; Beluch M P
PA Am.Cyanamid
LO Yardley, Pa., Hopewell; Bell Mead, N.Y., USA
PI US 6204283 B1 20010320
AI US 1998-92773 19980714
US 1999-351222 19990712
DT Patent
LA English
OS WPI: 2001-298906
FA LA; CT
AB A method for control of **parasitic mites** on **honeybees** is described, which consists of the application of an effective amount of tebufenpyrad. **Honeybees** from a colony 70-90% infected by V. jacobsoni were treated topically with a droplet of **acetone** containing 0.6, 0.06 or 0.006 ug tebufenpyrad; after 5 d, mortality of treated **bees** was 24-28%, while **mite** mortality was 44-92%. **Bee** tracheae infested with **Acarapis** woodi were placed on glass slides which were dipped into **acetone** containing 500 ppm tebufenpyrad; time to 100% mortality was 8-10 min. In a field test, 2 hives infested with V. jacobsoni were treated with 2 strips (2.5 x 17 cm), each containing 18% tebufenpyrad in a 60:40 beeswax/lard (Crisco) mix, inserted into the brood chamber, and **mite** infestation was monitored using sticky boards. Number of **mites** caught per day was 66-101 before and 1080-1777 after treatment. (No EX).
TI Protecting beneficial insects, especially **bees,** from damage caused by **parasitic mites** comprises applying tebufenpyrad to the insects or their brood chamber or habitat.
AB A method for control of **parasitic mites** on

honeybees is described, which consists of the application of an effective amount of tebufenpyrad. **Honeybees** from a colony 70-90% infected by V. jacobsoni were treated topically with a droplet of **acetone** containing 0.6, 0.06 or 0.006 ug tebufenpyrad; after 5 d, mortality of treated **bees** was 24-28%, while **mite** mortality was 44-92%. **Bee** tracheae infested with **Acarapis** woodi were placed on glass slides which were dipped into **acetone** containing 500 ppm tebufenpyrad; time to 100% mortality was 8-10 min. In a field test, 2 hives infested with V.. . . (2.5 x 17 cm), each containing 18% tebufenpyrad in a 60:40 beeswax/lard (Crisco) mix, inserted into the brood chamber, and **mite** infestation was monitored using sticky boards. Number of **mites** caught per day was 66-101 before and 1080-1777 after treatment. (No EX).

CT TEBUFENPYRAD *TR; TEBUFENPYRAD *SE; APIDAE *SE; **APIS *SE**; MELLIFERA *SE; **BEE *SE**; **ACARAPIS *TR**; WOODI *TR; **VARROA *TR**; JACOBSONI *TR; HYMENOPTERA *SE; TARSONEMIDAE *TR; **ACARINA *TR**; MK-239 *RN; **ACARICIDE *FT**; TOPICAL *FT; DOSAGE *FT; SURVIVAL *FT; NON-TARGET *FT; LAB.TEST *FT; HIVE *FT; FIELD *FT; N.Y. *FT; APPL.TECHNIQUE *FT; USA *FT; AREA-AMERICA *FT; **ACARICIDES *FT**; INSECTICIDES *FT; TR *FT; SE *FT

L7 ANSWER 15 OF 85 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 4

AN 2001:494887 CAPLUS

DN 135:103531

TI Analysis of organophosphorus **pesticides** in **honeybee** by liquid chromatography-atmospheric pressure chemical ionization-mass spectrometry

AU Fernandez, M.; Pico, Y.; Girotti, S.; Manes, J.

CS Laboratori de Bromatologia i Toxicologia Facultat de Farmacia, Universitat de Valencia, Valencia, 46100, Spain

SO Journal of Agricultural and Food Chemistry (2001), 49(8), 3540-3547 CODEN: JAFCAU; ISSN: 0021-8561

PB American Chemical Society

DT Journal

LA English

AB **Pesticides** applied in extended agricultural fields may be controlled by means of bioindicators, such as **honeybees**, in which are the **pesticides** bioaccumulate. Liq. chromatog.-atm. pressure chem. ionization-mass spectrometry (LC-APCI-MS) expts. with pos. (PI) and neg. (NI) ion modes were optimized for the anal. of 22 organophosphorus **pesticides** in **honeybee** samples. The extn. required 3 g of sample, which was extd. with **acetone**. The ext. was purified with coagulating soln. and reextd. with Cl2CH2. **Pesticides** studied could be detected by both ionization modes except for parathion, parathion-Me, and bromophos, which did not give signals in PI mode, and triazophos, which was not detected in NI mode. Fragmentation voltage and vaporizer temp. were optimized to achieve the highest sensitivity. The spectra profile of each **pesticide** in PI mode showed the [M + H]+ ion as the main signal, whereas in NI mode only fragment ions were shown. The detection limit obtained in selected ion monitoring mode ranged from 1 to 15 .mu.g kg-1. The av. recoveries from spiked **honeybees** at various concn. levels (0.5-5 mg kg-1) exceeded 65% with relative std. deviations of 4-15%. The method was applied to real samples, in which residues of coumaphos and dimethoate were detected.

RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Analysis of organophosphorus **pesticides** in **honeybee** by liquid chromatography-atmospheric pressure chemical ionization-mass spectrometry

AB **Pesticides** applied in extended agricultural fields may be controlled by means of bioindicators, such as **honeybees**, in

which are the **pesticides** bioaccumulate. Liq. chromatog.-atm. pressure chem. ionization-mass spectrometry (LC-APCI-MS) expts. with pos. (PI) and neg. (NI) ion modes were optimized for the anal. of 22 organophosphorus **pesticides** in **honeybee** samples. The extn. required 3 g of sample, which was extd. with **acetone**. The ext. was purified with coagulating soln. and reextd. with Cl2CH2. **Pesticides** studied could be detected by both ionization modes except for parathion, parathion-Me, and bromophos, which did not give signals in PI mode, and triazophos, which was not detected in NI mode. Fragmentation voltage and vaporizer temp. were optimized to achieve the highest sensitivity. The spectra profile of each **pesticide** in PI mode showed the [M + H]+ ion as the main signal, whereas in NI mode only fragment ions were shown. The detection limit obtained in selected ion monitoring mode ranged from 1 to 15 .mu.g kg-1. The av. recoveries from spiked **honeybees** at various concn. levels (0.5-5 mg kg-1) exceeded 65% with relative std. deviations of 4-15%. The method was applied to real samples, in which residues of coumaphos and dimethoate were detected.

ST organophosphorus **pesticide** LC atm pressure chem ionization MS

IT Chemical ionization mass spectrometry
(atm.-pressure; organophosphorus **pesticides** detn. in **honeybee** by LC-atm. pressure pos. or neg. ion chem. ionization-MS)

IT **Honeybee**
Liquid chromatography
(organophosphorus **pesticides** detn. in **honeybee** by LC-atm. pressure pos. or neg. ion chem. ionization-MS)

IT Phosphates, analysis
RL: ANT (Analyte); ANST (Analytical study)
(organophosphorus **pesticides** detn. in **honeybee** by LC-atm. pressure pos. or neg. ion chem. ionization-MS)

IT **Pesticides**
(organophosphorus; organophosphorus **pesticides** detn. in **honeybee** by LC-atm. pressure pos. or neg. ion chem. ionization-MS)

IT Phosphates, analysis
RL: ANT (Analyte); ANST (Analytical study)
(phosphorodithioates; organophosphorus **pesticides** detn. in **honeybee** by LC-atm. pressure pos. or neg. ion chem. ionization-MS)

IT Phosphates, analysis
RL: ANT (Analyte); ANST (Analytical study)
(phosphorothioates; organophosphorus **pesticides** detn. in **honeybee** by LC-atm. pressure pos. or neg. ion chem. ionization-MS)

IT 56-38-2, Parathion 56-72-4, Coumaphos 60-51-5, Dimethoate 121-75-5, Malathion 298-00-0, Parathion-methyl 311-45-5, Paraoxon 333-41-5, Diazinon 732-11-6, Phosmet 944-22-9, Fonofos 950-37-8, Methidathion 2104-96-3, Bromophos 2275-23-2, Vamidothion 2310-17-0, Phosalone 2597-03-7 2642-71-9, azinphos-ethyl 5598-13-0 13457-18-6, Pyrazophos 13593-03-8, Quinalphos 23505-41-1, Pirimiphos-ethyl 23560-59-0, Heptenophos 24017-47-8, Triazophos 29232-93-7, Pirimiphos-methyl
RL: ANT (Analyte); ANST (Analytical study)
(organophosphorus **pesticides** detn. in **honeybee** by LC-atm. pressure pos. or neg. ion chem. ionization-MS)

L7 ANSWER 16 OF 85 CABA
AN 2002:47656 CABA
DN 20013180284
TI Resistance of the honey **bee, Apis** mellifera to the **acarian parasite Varroa** destructor: behavioural and electroantennographic data

AU Martin, C.; Provost, E.; Roux, M.; Bruchou, C.; Crauser, D.; Clement, J. L.; Conte, Y. le; le Conte, Y.
CS Institut National de la Recherche Agronomique, Laboratoire de Biologie et Protection de abeille, Unite de Zoologie-Apidologie, Avignon, France. caroline.martin@univ-avignon.fr
SO Physiological Entomology, (2001) Vol. 26, No. 4, pp. 362-370. 24 ref.
Publisher: Blackwell Science. Oxford
ISSN: 0307-6962
CY United Kingdom
DT Journal
LA English
ED Entered STN: 20020308
Last Updated on STN: 20020308
AB One way in which A. mellifera honey **bees** resist V. destructor (collected from Avignon, France) is by detection and elimination of nestmates. This study uses behavioural tests and electroantennography to assess the role of chemostimuli in recognition by honey **bees** of this **acarian** ectoparasite. Behavioural tests using living or dead **parasites** involved observation of honey **bee** grooming activity (antennation) under controlled conditions in Petri dishes, and removal behaviour (uncapping and elimination of **parasitized** and unparasitized control brood cells) under natural conditions. Some **bees** from colonies with both small and large **parasite** populations showed aggressive behaviour (biting). No difference was observed according to whether the **mite** was dead or alive. Under natural conditions, **bees** uncapped more **parasitized** cells than control cells. Electroantennographic tests were performed to measure sensitivity to various **Varroa** extracts at three concentrations (10, 20 and 30 **Varroa** equivalents). Only 30 **Varroa** equivalent methanol extracts made from **Varroa** collected from brood cells elicited significantly greater antennal response than controls (pure solvent). All three methanol extracts elicited significantly greater antennal response than controls. No response was observed using **Varroa** extracts made with **acetone** or hexane. These findings suggest that polar products may act as chemostimuli for recognition of V. destructor by honey **bees** . Further study will be necessary to determine which polar products are involved in this recognition and assess grooming and removal behaviour using these products.
TI Resistance of the honey **bee, Apis** mellifera to the **acarian parasite Varroa** destructor: behavioural and electroantennographic data.
AB One way in which A. mellifera honey **bees** resist V. destructor (collected from Avignon, France) is by detection and elimination of nestmates. This study uses behavioural tests and electroantennography to assess the role of chemostimuli in recognition by honey **bees** of this **acarian** ectoparasite. Behavioural tests using living or dead **parasites** involved observation of honey **bee** grooming activity (antennation) under controlled conditions in Petri dishes, and removal behaviour (uncapping and elimination of **parasitized** and unparasitized control brood cells) under natural conditions. Some **bees** from colonies with both small and large **parasite** populations showed aggressive behaviour (biting). No difference was observed according to whether the **mite** was dead or alive. Under natural conditions, **bees** uncapped more **parasitized** cells than control cells. Electroantennographic tests were performed to measure sensitivity to various **Varroa** extracts at three concentrations (10, 20 and 30 **Varroa** equivalents). Only 30 **Varroa** equivalent methanol extracts made from **Varroa** collected from brood cells elicited significantly greater antennal response than controls (pure solvent). All three methanol extracts elicited significantly greater antennal response than controls. No

response was observed using **Varroa** extracts made with **acetone** or hexane. These findings suggest that polar products may act as chemostimuli for recognition of V. destructor by honey **bees** . Further study will be necessary to determine which polar products are involved in this recognition and assess grooming and removal. . .

BT **Apis**; Apidae; Hymenoptera; insects; arthropods; invertebrates; animals; Western Europe; Europe; Mediterranean Region; Developed Countries; European Union Countries; OECD Countries; Varroidae; Mesostigmata; **mites**; **Acari**; Arachnida

ST **Varroa** destructor

ORGN **Apis** mellifera; **Varroa**

L7 ANSWER 17 OF 85 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 5

AN 2001:520275 CAPLUS

DN 135:103534

TI Determination of organophosphorus **pesticides** in **honeybees** after solid-phase microextraction

AU Fernandez, M.; Padron, C.; Marconi, L.; Ghini, S.; Colombo, R.; Sabatini, A. G.; Girotti, S.

CS Laboratori de Bromatologia i Toxicologia, Facultat de Farmacia, Universitat de Valencia, Burjassot, Valencia, 46100, Spain

SO Journal of Chromatography, A (2001), 922(1-2), 257-265
CODEN: JCRAEY; ISSN: 0021-9673

PB Elsevier Science B.V.

DT Journal

LA English

AB A method based on solid-phase microextn. (SPME) followed by gas chromatog. with nitrogen-phosphorus detection was developed for the purpose of detg. 18 organophosphorus **pesticide** residues in **honeybee** samples (**Apis** mellifera). The extn. capacities of polyacrylate and poly(dimethylsiloxane) fibers were compared. The main factors affecting the SPME process, such as the absorption time profile, salt, and temp., were optimized. The method involved **honeybee** sample homogenization, elution with an **acetone**:water soln. (1:1) and diln. in water prior to fiber extn. Moreover, the matrix effect on the extn. was evaluated. In samples spiked at the 0.2 mg kg-1 level, the coeff. variation was between 1 and 13% and the detection limits were below 10 .mu.g kg-1. The SPME procedure was found to be quicker and more cost-effective than the solvent extn. method commonly used. The method was applied successfully to environmental screening. Parathion Me was detected and confirmed in the real samples analyzed.

RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Determination of organophosphorus **pesticides** in **honeybees** after solid-phase microextraction

AB A method based on solid-phase microextn. (SPME) followed by gas chromatog. with nitrogen-phosphorus detection was developed for the purpose of detg. 18 organophosphorus **pesticide** residues in **honeybee** samples (**Apis** mellifera). The extn. capacities of polyacrylate and poly(dimethylsiloxane) fibers were compared. The main factors affecting the SPME process, such as the absorption time profile, salt, and temp., were optimized. The method involved **honeybee** sample homogenization, elution with an **acetone**:water soln. (1:1) and diln. in water prior to fiber extn. Moreover, the matrix effect on the extn. was evaluated. In samples spiked at the 0.2 mg kg-1 level, the coeff. variation was between 1 and 13% and the detection limits were below 10 .mu.g kg-1. The SPME procedure was found to be quicker and more cost-effective than the solvent extn. method commonly used. The method was applied successfully to environmental screening. Parathion Me was detected and confirmed in the real samples analyzed.

ST organophosphorus **pesticides** **honeybee** SPME gas chromatog; solid phase microextn organophosphorus **pesticides**

honeybee
IT Gas chromatography
Honeybee
(detn. of organophosphorus **pesticides** in **honeybees** after solid-phase microextn.)
IT **Pesticides**
(organophosphorus; detn. of organophosphorus **pesticides** in **honeybees** after solid-phase microextn.)
IT Microextraction
(solid-phase; detn. of organophosphorus **pesticides** in **honeybees** after solid-phase microextn.)
IT 56-38-2, Parathion ethyl 56-72-4, Coumaphos 121-75-5, Malathion 298-00-0, Parathion methyl 333-41-5, Diazinon 732-11-6, Phosmet 944-22-9, Fonofos 2104-96-3, Bromophos 2310-17-0, Phosalone 2597-03-7, Phenthoate 5598-13-0, Chlorpyrifos methyl 13457-18-6, Pyrazophos 13593-03-8, Quinalphos 23505-41-1, Pirimiphos ethyl 23560-59-0, Heptenophos 24017-47-8, Triazophos 29232-93-7, Pirimiphos methyl
RL: ANT (Analyte); ANST (Analytical study)
(detn. of organophosphorus **pesticides** in **honeybees** after solid-phase microextn.)

L7 ANSWER 18 OF 85 CAPLUS
AN 2001:493021 CAPLUS
DN 136:243278
TI Field evaluation of non-**pesticide** chemicals as honey **bee** repellents
AU Mayer, D. F.; Lunden, J. D.; Kovacs, G.; Miliczky, E. R.
CS Department of Entomology, Irrigated Agriculture Research & Extension Center, Washington State University, Prosser, WA, 99350, USA
SO Colloques - Institut National de la Recherche Agronomique (2001), 98(Hazards of Pesticides to Bees), 159-168
CODEN: COLIEZ; ISSN: 0293-1915
PB Institut National de la Recherche Agronomique
DT Journal
LA English
AB **Bee** poisoning from **pesticides** is a serious problem worldwide. Major concern exists for the safety of honey **bees** (**Apis** mellifera L.) as valuable pollinators of many horticultural crops. One way of reducing the **pesticide** hazard to **bees** is to apply a chem. repellent that will discourage **bees** from foraging on crops for an interval after a **bee** hazard **pesticide** has been applied. During 1990-1998, the authors conducted field tests on blooming apples (Malus domestica Borkh.), dandelions (Taraxacum officinale G. Weber, in Wiggers), buckwheat (officinale) and white Dutch clover (officinale) plants to evaluate their repellent effect to foraging honey **bees**. Evaluations were made by slowly walking through the plots and counting the no. of honey **bees** (30 s/6.7 m/0.91 m swath) except for apples where they were counted by slowly moving around and counting the no. of honey **bees** (30 s/1 tree) at 1 and 4 h. after application. The authors evaluated about 240 non-**pesticide** chems. Eleven chems. significantly reduced the no. of honey **bee** foragers at 1 h. after application but not at 4 h. In some tests, but not all, 10 chems. significantly reduced the no. of honey **bee** foragers at 1 h. after application but not at 4 h. One chem. significantly reduced the no. of honey **bee** foragers at 1 h. and 4 h. after application. In some tests, but not all, 2 chems. significantly reduced the no. of honey **bee** foragers at 4 h. after application but not at 1 h.
RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT
TI Field evaluation of non-**pesticide** chemicals as honey **bee**

repellents

AB Bee poisoning from pesticides is a serious problem worldwide. Major concern exists for the safety of honey bees (Apis mellifera L.) as valuable pollinators of many horticultural crops. One way of reducing the pesticide hazard to bees is to apply a chem. repellent that will discourage bees from foraging on crops for an interval after a bee hazard pesticide has been applied. During 1990-1998, the authors conducted field tests on blooming apples (Malus domestica Borkh.), dandelions (Taraxacum officinale G. Weber, in Wiggers), buckwheat (officinale) and white Dutch clover (officinale) plants to evaluate their repellent effect to foraging honey bees. Evaluations were made by slowly walking through the plots and counting the no. of honey bees (30 s/6.7 m/0.91 m swath) except for apples where they were counted by slowly moving around and counting the no. of honey bees (30 s/1 tree) at 1 and 4 h. after application. The authors evaluated about 240 non-pesticide chems. Eleven chems. significantly reduced the no. of honey bee foragers at 1 h. after application but not at 4 h. In some tests, but not all, 10 chems. significantly reduced the no. of honey bee foragers at 1 h. after application but not at 4 h. One chem. significantly reduced the no. of honey bee foragers at 1 h. and 4 h. after application. In some tests, but not all, 2 chems. significantly reduced the no. of honey bee foragers at 4 h. after application but not at 1 h.

ST honey bee repellent

IT Sauces (condiments)
(Barb-q-sauce; field evaluation of non-pesticide chems. as honey bee repellents)

IT Repellents
(Bird Shield repellent conc.; field evaluation of non-pesticide chems. as honey bee repellents)

IT Odor and Odorous substances
(Dr. Juice Fish Scent; field evaluation of non-pesticide chems. as honey bee repellents)

IT Odor and Odorous substances
(Fresh Scrape Urine Scent; field evaluation of non-pesticide chems. as honey bee repellents)

IT Garlic (Allium sativum)
(Garlic Barrier; field evaluation of non-pesticide chems. as honey bee repellents)

IT Waxes
RL: AGR (Agricultural use); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)
(Hot Pepper; field evaluation of non-pesticide chems. as honey bee repellents)

IT Repellents
(Hot Sauce Animal repellent; field evaluation of non-pesticide chems. as honey bee repellents)

IT Repellents
(Mol-Med Repellent; field evaluation of non-pesticide chems. as honey bee repellents)

IT Odor and Odorous substances
(Oak Cover Scent and Pine Cover Scent; field evaluation of non-pesticide chems. as honey bee repellents)

IT Deodorants
(Odor Eliminator, Odor Blaster; field evaluation of non-pesticide chems. as honey bee repellents)

IT Odor and Odorous substances
(Smelly Jelly; field evaluation of non-pesticide chems. as honey bee repellents)

IT Sage (Salvia)
(Triple Strength Sage; field evaluation of non-pesticide

chems. as honey **bee** repellents)
IT Mephitinae
(Triple Strength Skunk; field evaluation of non-**pesticide** chems. as honey **bee** repellents)
IT Soaps
RL: AGR (Agricultural use); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)
(Ultra Dawn dish soap; field evaluation of non-**pesticide** chems. as honey **bee** repellents)
IT Cucurbita foetidissima
(buffalo gourd; field evaluation of non-**pesticide** chems. as honey **bee** repellents)
IT Essential oils
RL: AGR (Agricultural use); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)
(cajuput; field evaluation of non-**pesticide** chems. as honey **bee** repellents)
IT Repellents
(cat and dog repellents; field evaluation of non-**pesticide** chems. as honey **bee** repellents)
IT Essential oils
RL: AGR (Agricultural use); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)
(cedarwood; field evaluation of non-**pesticide** chems. as honey **bee** repellents)
IT Essential oils
RL: AGR (Agricultural use); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)
(cinnamon; field evaluation of non-**pesticide** chems. as honey **bee** repellents)
IT Essential oils
RL: AGR (Agricultural use); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)
(clove; field evaluation of non-**pesticide** chems. as honey **bee** repellents)
IT Urine
(coyote; field evaluation of non-**pesticide** chems. as honey **bee** repellents)
IT Fruit and vegetable juices
(cranberry; field evaluation of non-**pesticide** chems. as honey **bee** repellents)
IT Food
(dyes, red food coloring; field evaluation of non-**pesticide** chems. as honey **bee** repellents)
IT Fats and Glyceridic oils, biological studies
RL: AGR (Agricultural use); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)
(evening primrose; field evaluation of non-**pesticide** chems. as honey **bee** repellents)
IT Banana (Musa)
(ext.; field evaluation of non-**pesticide** chems. as honey **bee** repellents)
IT Apple
Artemisia
Buckwheat (Fagopyrum esculentum)
Cinnamomum zeylanicum
Clover (Trifolium)
Dandelion
Eucalyptus radiata
Honeybee
Insect repellents
Lavender (Lavandula)

Molasses
Ocimum basilicum
Oregano
Pepper (Piper nigrum)
Peppermint (Mentha piperita)
Rosemary
Sorghum
Thyme (Thymus)
Ylang-ylang (Cananga odorata)
(field evaluation of non-**pesticide** chems. as honey **bee** repellents)

IT Castor oil
RL: AGR (Agricultural use); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)
(field evaluation of non-**pesticide** chems. as honey **bee** repellents)

IT Fats and Glyceridic oils, biological studies
RL: AGR (Agricultural use); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)
(fish, Alaska; field evaluation of non-**pesticide** chems. as honey **bee** repellents)

IT Fats and Glyceridic oils, biological studies
RL: AGR (Agricultural use); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)
(fish, Crockers Fish Oil; field evaluation of non-**pesticide** chems. as honey **bee** repellents)

IT Fats and Glyceridic oils, biological studies
RL: AGR (Agricultural use); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)
(fish, Dexol Fish Oil; field evaluation of non-**pesticide** chems. as honey **bee** repellents)

IT Dyes
(food, red food coloring; field evaluation of non-**pesticide** chems. as honey **bee** repellents)

IT Lipids, biological studies
RL: AGR (Agricultural use); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)
(fungal; field evaluation of non-**pesticide** chems. as honey **bee** repellents)

IT Commiphora molmol
(gammipho molmol; field evaluation of non-**pesticide** chems. as honey **bee** repellents)

IT Cranberry
Raspberry
(juice; field evaluation of non-**pesticide** chems. as honey **bee** repellents)

IT Perfumes
(myrrh; field evaluation of non-**pesticide** chems. as honey **bee** repellents)

IT Ajowan (Carum copticum)
(oil; field evaluation of non-**pesticide** chems. as honey **bee** repellents)

IT Petroleum products
(oils, Volck crop oil; field evaluation of non-**pesticide** chems. as honey **bee** repellents)

IT Essential oils
RL: AGR (Agricultural use); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)
(pepper, Piper nigrum berry; field evaluation of non-**pesticide** chems. as honey **bee** repellents)

IT Fruit and vegetable juices
(raspberry juice; field evaluation of non-**pesticide** chems. as

honey **bee** repellents)

IT Essential oils
RL: AGR (Agricultural use); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)
(rosemary, rosemarius camphor; field evaluation of non-**pesticide** chems. as honey **bee** repellents)

IT Flavoring materials
(smoke flavors, liq. smoke; field evaluation of non-**pesticide** chems. as honey **bee** repellents)

IT 107-92-6, Butyric acid, biological studies
RL: AGR (Agricultural use); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)
(Honey robber; field evaluation of non-**pesticide** chems. as honey **bee** repellents)

IT 34363-01-4
RL: AGR (Agricultural use); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)
(Nu-Film, Vapor Gard; field evaluation of non-**pesticide** chems. as honey **bee** repellents)

IT 54-12-6, Tryptophan 56-54-2, Quinidine 57-10-3, Palmitic acid, biological studies 57-11-4, Stearic acid, biological studies 60-24-2, 2-Mercaptoethanol 60-35-5, Acetamide, biological studies 64-10-8, Phenylurea 64-19-7, Acetic acid, biological studies 65-30-5 66-25-1, Hexanal 67-63-0, Isopropanol, biological studies 67-66-3, Chloroform, biological studies 67-68-5, Dimethyl sulfoxide, biological studies 71-23-8, Propanol, biological studies 71-36-3, 1-Butanol, biological studies 75-15-0, Carbon disulfide, biological studies 75-50-3, Trimethylamine, biological studies 75-65-0, 2-Methyl-2-propanol, biological studies 76-22-2, Camphor 78-70-6, Linalool **78-93-3, 2-Butanone**, biological studies 79-16-3, N-Methylacetamide 79-31-2, Isobutyric acid 79-77-6, .beta.-Ionone 80-59-1, Tiglic acid 83-34-1, Skatole 84-66-2, Diethylphthalate 87-44-5 89-83-8, Thymol 90-02-8, Salicylaldehyde, biological studies 93-58-3, Methyl benzoate 94-96-2 95-48-7, o-Cresol, biological studies 97-53-0, Eugenol 99-03-6, 3'-Aminoacetophenone 99-76-3, p-Hydroxybenzoic acid methyl ester 100-41-4, Ethyl benzene, biological studies 100-52-7, Benzaldehyde, biological studies 101-31-5, l-Hyoscyamine 103-83-3, Dimethylbenzylamine 104-75-6, 2-Ethylhexylamine **106-35-4, 3-Heptanone** 106-44-5, p-Cresol, biological studies 106-65-0, Succinic acid dimethyl ester 106-68-3, 3-Octanone 107-06-2, 1,2-Dichloroethane, biological studies **107-87-9, 2-Pentanone** 108-05-4, Vinyl acetate, biological studies 108-31-6, Maleic anhydride, biological studies 108-95-2, Phenol, biological studies 110-12-3, 5-Methyl-**2-hexanone** 110-13-4, 2,5-Hexanedione **110-43-0, 2-Heptanone** 110-54-3, n-Hexane, biological studies 110-93-0, 6-Methyl-5-hepten-2-one **111-13-7, 2-Octanone** 111-27-3, 1-Hexanol, biological studies 111-84-2, n-Nonane 111-87-5, 1-Octanol, biological studies 112-14-1, Octylacetate 112-17-4, n-Decylacetate 112-37-8, Undecanoic acid 112-39-0, Palmitic acid methyl ester 112-44-7, Undecanal 119-61-9, Benzophenone, biological studies 120-72-9, Indole, biological studies 122-79-2, Phenyl acetate 123-11-5, p-Anisaldehyde, biological studies **123-19-3, 4-Heptanone** 123-72-8, Butyraldehyde 123-92-2, Isoamyl acetate 124-07-2, Caprylic acid, biological studies 125-12-2, Isobornyl acetate 133-06-2, Captan 135-19-3, .beta.-Naphthol, biological studies 136-45-8, MGK repellent 326 138-86-3, Limonene 140-11-4, Benzyl acetate 142-62-1, n-Caproic acid, biological studies 142-82-5, n-Heptane, biological studies 147-85-3, L-Proline, biological studies 147-93-3, o-Mercaptobenzoic acid 328-50-7, .alpha.-Ketoglutaric acid 331-39-5, Caffeic acid 334-48-5, Capric acid 458-37-7, Curcumin 470-82-6, Cineole 471-34-1, Calcium

carbonate, biological studies 488-10-8, Jasmone 490-79-9,
2,5-Dihydroxybenzoic acid 499-75-2, Carvacrol 502-49-8, Cyclooctanone
506-12-7, Heptadecanoic acid 507-70-0, Borneol 540-84-1,
2,2,4-Trimethylpentane 544-63-8, Tetradecanoic acid, biological studies
546-49-6, Artemisia ketone 551-93-9, 2'-Aminoacetophenone 614-18-6,
Ethyl nicotinate 624-92-0, Methyldisulfide 629-19-6, n-Propyl
disulfide 638-53-9, Tridecanoic acid 705-86-2, .delta.-Decalactone
941-98-0, 1'-Acetonaphthone 1330-43-4, Sodium tetraborate 1337-83-3,
Aldenal C 11 1596-84-5, Succinic acid 2,2-dimethylhydrazide 2016-57-1,
Decylamine 2039-88-5, 2-Bromostyrene 2186-92-7, Anisaldehyde
dimethylacetal 2315-68-6, n-Propyl benzoate 3391-86-4, 1-Octen-3-ol
3796-70-1, Geranylacetone 4602-84-0, Farnesol 7620-46-4,
9-Isothiocyanato acridine 7664-38-2, Phosphoric acid, biological studies
7704-34-9, Microthiol, biological studies 9004-99-3 12240-15-2,
Prussian Blue 14371-10-9, trans-Cinnamaldehyde 20244-19-3
23422-53-9, Carzol 92SP 24804-31-7, Calcium oxalate hydrate
25414-22-6, 2-Methoxyfuran 27941-88-4, Amino acetophenone 36653-82-4,
1-Hexadecanol 41446-60-0, cis-7-Tetradecene 62242-52-8, Hexadecanone
70802-40-3 74214-63-4, .beta.-Carboline-3-carboxylic acid 90823-38-4,
Ro-Pel 116580-64-4, Margosan O 138261-41-3, NTN 33893-240FS
143350-75-8, Kinetic 404578-56-9, Algafer LPF 404580-56-9, Baitmate
404580-58-1, Can 17 404580-65-0, Compensol 404580-79-6, N-O-Dor II
404581-66-4, AeroSpray 404582-04-3, Epoleon N 100 404582-84-9,
Scent-A-Way 404582-85-0, Sun Shield 404582-89-4, Terramark SPI
404582-90-7, Super Pepper Guard 404582-91-8, Free Shield 404582-94-1,
Frost Shield 404583-18-2, Fruit Boost 404583-20-6, Nutra-sol
404584-91-4, Get Off My Garden 404585-84-8, Uran 32 404586-91-0, X-O
Deodorizer 404586-92-1, XP 201 404586-93-2, Y-Guard 404587-06-0,
U-V-Killer
RL: AGR (Agricultural use); BSU (Biological study, unclassified); BIOL
(Biological study); USES (Uses)
(field evaluation of non-**pesticide** chems. as honey
bee repellents)

L7 ANSWER 19 OF 85 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 6
AN 2001:376466 CAPLUS
DN 135:43838
TI Semiochemicals from larval food affect the locomotor behavior of
Varroa destructor
AU Nazzi, Francesco; Milani, Norberto; Della Vedova, Giorgio; Nimis, Matteo
CS Dipartimento di Biologia applicata alla Difesa delle Piante, Universita di
Udine, Udine, 33100, Italy
SO Apidologie (2001), 32(2), 149-155
CODEN: APDGB5; ISSN: 0044-8435
PB EDP Sciences
DT Journal
LA English
AB The stimuli inducing cell invasion by **Varroa** destructor were
studied using a bioassay in which a **mite** was obsd. in a glass
arena with four wells, each contg. a live **bee** (**Apis**
mellifera) larva, treated or not with the stimulus to be tested. Larval
food collected from drone cells before capping elicited a strong response
from V. destructor. Both ether and **acetone** exts. of larval food
induced the same response as larval food itself suggesting the existence
of semiochems. attracting or arresting the **mite**.
RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT
TI Semiochemicals from larval food affect the locomotor behavior of
Varroa destructor
AB The stimuli inducing cell invasion by **Varroa** destructor were
studied using a bioassay in which a **mite** was obsd. in a glass
arena with four wells, each contg. a live **bee** (**Apis**

mellifera) larva, treated or not with the stimulus to be tested. Larval
food collected from drone cells before capping elicited a strong response
from V. destructor. Both ether and **acetone** exts. of larval food
induced the same response as larval food itself suggesting the existence
of semiochems. attracting or arresting the **mite**.

ST semiochem **bee** larva food locomotor behavior **Varroa**;
parasite invasion **bee** hive semiochem

IT Behavior
(locomotor; semiochems. from larval food affect locomotor behavior of
Varroa destructor)

IT **Honeybee**
Varroa destructor
(semiochems. from larval food affect locomotor behavior of
Varroa destructor)

IT Semiochemicals
RL: BAC (Biological activity or effector, except adverse); BOC (Biological
occurrence); BSU (Biological study, unclassified); BIOL (Biological
study); OCCU (Occurrence)
(semiochems. from larval food affect locomotor behavior of
Varroa destructor)

IT 112-39-0, Methyl palmitate
RL: BAC (Biological activity or effector, except adverse); BSU (Biological
study, unclassified); BIOL (Biological study)
(semiochems. from larval food affect locomotor behavior of
Varroa destructor)

L7 ANSWER 20 OF 85 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:493013 CAPLUS
DN 136:114027
TI Effects of wetting agent selection on the contact toxicity of a dimethoate
formulation to **honeybees**
AU Thompson, H. M.
CS National Bee Unit, CSL, York, YO41 1LZ, UK
SO Colloques - Institut National de la Recherche Agronomique (2001),
98(Hazards of Pesticides to Bees), 79-81
CODEN: COLIEZ; ISSN: 0293-1915
PB Institut National de la Recherche Agronomique
DT Journal
LA English
AB A range of wetting agents are suggested by OECD Guideline 214 for
assessing the contact toxicity of **pesticides** to
honeybees. This study aimed to det. the effect of wetting agent
selection on the contact toxicity of an EC formulation of dimethoate. A
no. of wetting agents were used; Triton X100, Tween 20, Igepal, Span 20,
Brij 35 and polyoxyethylene W1 all at 1 g/l and the results compared with
dimethoate formulation dissolved in **acetone**. All dilns. were
prepd. within two hours of use, except Triton X100 and **acetone**
where an addnl. set of dilns. were prepd. 16 h in advance. All
bees were dosed in groups of ten with 3 replicates per dose at
dose levels of 0.25, 0.125 and 0.063 .mu.g a.i. dimethoate/**bee**.
All tests were run concurrently with a wetting agent control (30
bees) to provide data on the toxicity of the wetting agent alone.
Mortality was assessed at 4, 24 and 48 h after dosing and probit anal.
performed to det. the 48 h LD50, 95% confidence limits and slope of the
dose-response. The results of this study are presented and the effects on
choice of wetter agent discussed.
RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Effects of wetting agent selection on the contact toxicity of a dimethoate
formulation to **honeybees**
AB A range of wetting agents are suggested by OECD Guideline 214 for
assessing the contact toxicity of **pesticides** to

honeybees. This study aimed to det. the effect of wetting agent selection on the contact toxicity of an EC formulation of dimethoate. A no. of wetting agents were used; Triton X100, Tween 20, Igepal, Span 20, Brij 35 and polyoxyethylene W1 all at 1 g/l and the results compared with dimethoate formulation dissolved in **acetone**. All dilns. were prepd. within two hours of use, except Triton X100 and **acetone** where an addnl. set of dilns. were prepd. 16 h in advance. All **bees** were dosed in groups of ten with 3 replicates per dose at dose levels of 0.25, 0.125 and 0.063 .mu.g a.i. dimethoate/**bee**. All tests were run concurrently with a wetting agent control (30 **bees**) to provide data on the toxicity of the wetting agent alone. Mortality was assessed at 4, 24 and 48 h after dosing and probit anal. performed to det. the 48 h LD50, 95% confidence limits and slope of the dose-response. The results of this study are presented and the effects on choice of wetter agent discussed.

ST **honeybee** wetting agent **pesticide** toxicity

IT Death
Honeybee
Wetting agents
(effects of wetting agent selection on the contact toxicity of a dimethoate formulation to **honeybees**)

IT Polyoxyalkylenes, biological studies
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(effects of wetting agent selection on the contact toxicity of a dimethoate formulation to **honeybees**)

IT **Pesticides**
(toxicity; effects of wetting agent selection on the contact toxicity of a dimethoate formulation to **honeybees**)

IT 9016-45-9
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(Igepal; effects of wetting agent selection on the contact toxicity of a dimethoate formulation to **honeybees**)

IT 60-51-5, Dimethoate 1338-39-2, Span 20 9002-92-0, Brij 35 9002-93-1, Triton X100 9005-64-5, Tween 20 25322-68-3
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(effects of wetting agent selection on the contact toxicity of a dimethoate formulation to **honeybees**)

L7 ANSWER 21 OF 85 CROPU

AN 2001-84002 CROPU I F H Q R L

TI Specialty crops. Chemicals and clearances.

AU ---

LO USA

SO Farm Chem. (164, No. 3, 44-51, 2001)
CODEN: FARCAC

DT Journal

LA English

FA AB; LA; CT

AB New products and label changes for stone, citrus, soft and pomaceous fruit and vegetable crops in the USA are reviewed. Label changes, including extensions and maximum use rates, are listed for: Stimplex Crop Biostimulant, Galltrol-A Crown Gall Preventive, Sovran (kresoxim methyl), SpinTor 2SC Naturalyte and Tracer Naturalyte (both spinosad), Drexel diazinon 50W, Mycotrol O (Beauveria bassiana), Valero, Mesa, Cytokin Bioregulator Concentrate, CytoPlex HMS, Confirm (tebufenozide), Nova and Rally (both myclobutanil), Abound (azoxystrobin), Agri-**Mek** (avermectin B1), Bravo (chlorothalonil), Fulfill (pymetrozine), Proclaim (emamectin), Ridomil Gold EC (metalaxyl-M), Elevate (fenhexamid), Omite/Comite (propargite), Di/Tera ES (Myrothecium verrucaria) and Soil Triggrr PGR (cytokinin).

AB. . . Mycotrol O (Beauveria bassiana), Valero, Mesa, Cytokin Bioregulator Concentrate, CytoPlex HMS, Confirm (tebufenozide), Nova and Rally (both

myclobutanil), Abound (azoxystrobin), Agri-**Mek** (avermectin B1), Bravo (chlorothalonil), Fulfill (pymetrozine), Proclaim (emamectin), Ridomil Gold EC (metalaxyl-M), Elevate (fenhexamid), Omite/Comite (propargite), Di/Tera ES (Myrothecium verrucaria). . .

ABEX. . . O (all states except Hawaii), Cytokin Bioregulator Concentrate and CytoPlex HMS (on all crops), Confirm (emergency use on California grapes), Agri-**Mek** (California grapes), Bravo (section 2(ee) recommendation on beans in California), Proclaim (California cole, lettuce and celery) and Ridomil Gold EC. . . (thiophanate + mancozeb + imidacloprid), Prozap Zinc Oat Bait and Pellets (both zinc phosphide), Pollination Enhancement Fruit Boost with QMP (**bee** pheromone), Gavel (zoxamide), Elexa (chitosan), Blockade (acibenzolar S-methyl), Switch (fludioxonil + cyprodinil), Deliver (Bacillus thuringiensis kurstaki) and Knack (pyriproxyfen). (AL). . .

CT. . . ALFALFA *TR; PEANUT *TR; STRAWBERRY *TR; RASPBERRY *TR; BLACKBERRY *TR; CRANBERRY *TR; ALMOND *TR; WALNUT *TR; PECAN *TR; NECTARINE *TR; **PLUM *TR**; TIMOTHY *TR; CLOVER *TR; WHEAT *TR; BARLEY *TR; SUGAR-BEET *TR; KIWIFRUIT *TR; PISTACHIO *TR; ASPARAGUS *TR; LETTUCE *TR; SPINACH. . .

L7 ANSWER 22 OF 85 WPIDS

AN 2000-524406 [47] WPIDS
DNC C2000-155765
TI 4-Methoxy-2,3,5,6-tetrafluorobenzyl 3-(2,2-difluorovinyl)-2,2-dimethylcyclopropanecarboxylate, useful as a **pesticide**.
DC C03 D22
IN IWASAKI, T; MATSUO, N
PA (SUMO) SUMITOMO CHEM CO LTD
CYC 89
PI WO 2000046178 A1 20000810 (200047)* EN 35p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS KE KG KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
JP 2000229914 A 20000822 (200055) 9p
AU 2000018913 A 20000825 (200059)
ADT WO 2000046178 A1 WO 2000-JP28 20000106; JP 2000229914 A JP 1999-28891 19990205; AU 2000018913 A AU 2000-18913 20000106
FDT AU 2000018913 A Based on WO 2000046178
PRAI JP 1999-28891 19990205
AB WO 200046178 A UPAB: 20000925

NOVELTY - 4-Methoxy-2,3,5,6-tetrafluorobenzyl 3-(2,2-difluorovinyl)-2,2-dimethylcyclopropanecarboxylate (I) is new.

DETAILED DESCRIPTION - 4-Methoxy-2,3,5,6-tetrafluorobenzyl 3-(2,2-difluorovinyl)-2,2-dimethylcyclopropanecarboxylate of formula (I) is new.

An INDEPENDENT CLAIM is made for **pesticidal** compositions comprising (I) and a carrier.

ACTIVITY - **Pesticide**, insecticide, **acaricide**; insect repellent.

MECHANISM OF ACTION - None given.

USE - Useful as a **pesticide**, insecticide and **acaricide** for killing repelling and controlling the spread of lepidoptera (moths), diptera (flies), dictyoptera (cockroaches), hymeoptera (ants, wasps and **bees**), siphonaptera e.g. Pulex irritans, anoplura (lice), isoptera (termites), **acarina** (**mites** and ticks), hemiptera (aphids), coleoptera (beetles and weevils), thysanoptera (thrips) and orthoptera (locusts).

ADVANTAGE - More effective broad spectrum **pesticide** than other ester **pesticides**. (I) (0.002 vol. %) in **acetone**

(0.64 ml) was placed in an aluminum dish and was air dried. Ten female mosquitoes in a cup covered with 16-mesh Nylon (RTM) were placed mesh side down onto the treated aluminum surface at 25 deg. C for 2 hours. The cup was then removed and the insects were fed and watered for 24 hours. The mortality after 24 hours was 100 %. A comparable test with an conventional ester as per EP378026A gave a 24 hour mortality rate of 35 %.
Dwg.0/0

TI 4-Methoxy-2,3,5,6-tetrafluorobenzyl 3-(2,2-difluorovinyl)-2,2-dimethylcyclopropanecarboxylate, useful as a **pesticide**.

AB . . .
is new.

DETAILED DESCRIPTION - 4-Methoxy-2,3,5,6-tetrafluorobenzyl 3-(2,2-difluorovinyl)-2,2-dimethylcyclopropanecarboxylate of formula (I) is new.

An INDEPENDENT CLAIM is made for **pesticidal** compositions comprising (I) and a carrier.

ACTIVITY - **Pesticide,** insecticide, **acaricide;** insect repellent.

MECHANISM OF ACTION - None given.

USE - Useful as a **pesticide,** insecticide and **acaricide** for killing repelling and controlling the spread of lepidoptera (moths), diptera (flies), dictyoptera (cockroaches), hymeoptera (ants, wasps and **bees**), siphonaptera e.g. Pulex irritans, anoplura (lice), isoptera (termites), **acarina** (**mites** and ticks), hemiptera (aphids), coleoptera (beetles and weevils), thysanoptera (thrips) and orthoptera (locusts).

ADVANTAGE - More effective broad spectrum **pesticide** than other ester **pesticides**. (I) (0.002 vol. %) in **acetone** (0.64 ml) was placed in an aluminum dish and was air dried. Ten female mosquitoes in a cup covered with. . .

TT TT: METHOXY USEFUL **PEST**.

L7 ANSWER 23 OF 85 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
AN 2000-099724 [09] WPIDS
DNC C2000-029133
TI Method to control **parasitic mites** on beneficial insects e.g. Apidae.
DC B03 C02
IN BAUMBACH, W R; BELUCH, M P; BLACK, B C
PA (AMCY) AMERICAN CYANAMID CO
CYC 27
PI EP 972448 A2 20000119 (200009)* EN 4p
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
CA 2277487 A1 20000114 (200026) EN
MX 9906531 A1 20000301 (200123)
ADT EP 972448 A2 EP 1999-305410 19990707; CA 2277487 A1 CA 1999-2277487 19990712; MX 9906531 A1 MX 1999-6531 19990713
PRAI US 1998-115787 19980714
AB EP 972448 A UPAB: 20000218

NOVELTY - A method for the protection of beneficial insects from infestation and damage caused by **parasitic mites** which comprises applying tebufenpyrad to the insects or **mites,** their brood chamber or habitat.

ACTIVITY - Antiparasitic; **Acaricide**. **Apis** mellifera (honey **bees**) infested with 70-90% **Varroa** jacobsoni (**varroa mites**) were treated with a 1 mu l droplet of tebufenpyrad in **acetone** (50-52 **bees** were treated per dosage). The treated **bees** were placed in an incubator at 31 deg. C in the dark and fed a 50% sugar solution for 5 days. A dosage of 0.6 mu g gave a mortality rate for **bees** of 28% and for **mites** 92%.

MECHANISM OF ACTION - None given.
USE - To control **parasitic mites** on beneficial insects and to protect the insects against infestation by the **mites**.
ADVANTAGE - The method can be used with little or no concommitant harm to the beneficial host.
Dwg.0/0

TI   Method to control **parasitic mites** on beneficial insects e.g. Apidae.

AB   . . . 972448UPAB: 20000218
NOVELTY - A method for the protection of beneficial insects from infestation and damage caused by **parasitic mites** which comprises applying tebufenpyrad to the insects or **mites**, their brood chamber or habitat.
ACTIVITY - Antiparasitic; **Acaricide**. **Apis** mellifera (honey **bees**) infested with 70-90% **Varroa** jacobsoni (**varroa mites**) were treated with a 1 mu l droplet of tebufenpyrad in **acetone** (50-52 **bees** were treated per dosage). The treated **bees** were placed in an incubator at 31 deg. C in the dark and fed a 50% sugar solution for 5 days. A dosage of 0.6 mu g gave a mortality rate for **bees** of 28% and for **mites** 92%.
MECHANISM OF ACTION - None given.
USE - To control **parasitic mites** on beneficial insects and to protect the insects against infestation by the **mites**.
ADVANTAGE - The method can be used with little or no concommitant harm to the beneficial host.
Dwg.0/0

TECH   UPTX: 20000218
TECHNOLOGY FOCUS - AGRICULTURE - Preferred Method: The beneficial insects are Apidae, preferably **Apinae, Euglossinae** or **bombinae**. The **parasitic mites** are **Varroa** jacobsoni, **Acarapis** woodi and Tropilaelaps clareae.

TT   TT: METHOD CONTROL **PARASITIC MITE** BENEFICIAL INSECT.

L7   ANSWER 24 OF 85 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
AN   2000-099723 [09]   WPIDS
DNC   C2000-029132
TI   Method to control **parasitic** and saprophagous **mite** control on beneficial insects e.g. honey **bees**.
DC   B03 C02
IN   BAUMBACH, W R; BELUCH, M P; BLACK, B C; BAUMBACH, R W
PA   (AMCY) AMERICAN CYANAMID CO; (BADI) BASF AG
CYC   27
PI   EP 972447   A2 20000119 (200009)* EN   8p
        R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
      CA 2277719   A1 20000114 (200026) EN
      MX 9906094   A1 20000801 (200137)
      EP 972447   B1 20030502 (200330) EN
        R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
      DE 69907325   E 20030605 (200345)
ADT   EP 972447 A2 EP 1999-305549 19990713; CA 2277719 A1 CA 1999-2277719 19990712; MX 9906094 A1 MX 1999-6094 19990628; EP 972447 B1 EP 1999-305549 19990713; DE 69907325 E DE 1999-607325 19990713, EP 1999-305549 19990713
FDT   DE 69907325 E Based on EP 972447
PRAI US 1998-115091   19980714
AB   EP   972447 A UPAB: 20000218
NOVELTY - A method for the protection of beneficial insects from infestation or saprophagous **mites** comprises applying to the

insects, their breeding ground or habitat, a **parasitically** effective amount of a mitochondrial electron transport inhibitor or a pyrimidine (I).

DETAILED DESCRIPTION - A method for the protection of beneficial insects from infestation or saprophagous **mites** comprises applying to the insects or **mites**, their breeding ground or habitat, a **parasitically** effective amount of a mitochondrial electron transport inhibitor or a pyrimidine of formula (I).

X1, X2 = O, S(O)n, CO, CH2, or NR;
n = 0-2;

R = H, 1-6C alkyl;

R1, R10 = H or halogen;

R2, R9 = H, halogen, CN, NO2, 1-6C haloalkyl, 1-6C alkoxy, 1-6C alkylthio, NR11R12, 1-6C alkoxycarbonyl or 1-6C alkyl (optionally substituted by 1 or more 1-4C alkoxy or 1-4C haloalkoxy);

R11, R12 = 1-6C alkyl, H;

R3, R8 = H, Cl, CN, NO2, 1-6C haloalkyl, 2-6C haloalkenyl; 2-6C haloalkynyl, 1-6C haloalkoxy, 1-6C haloalkylthio, 1-6C haloalkylsulfinyl, 1-6C haloalkylsulfonyl, 1-6C haloalkoxycarbonyl, 1-6C alkyl (optionally substituted with 1 or more alkoxy groups);

R4, R7 = H, halogen, CN, 1-6C alkyl, 1-6C alkoxy;

R5 = H, halogen, CN, 1-6C alkyl, 1-6C haloalkyl, 1-6C alkoxy, 1-6C alkylthio, 1-6C alkylsulfinyl or phenyl; and

R6 = H, 1-6C alkyl, provided that when R6 is 1-6C alkyl, then R5 = H.

ACTIVITY - Antiparasitic; Antihelmintic. The efficiency of (I) against **Varroa** jacobsoni **parasites** (70% infestation) on **Apis** mellifera (honey **bees**) was evaluated by applying 4-(alpha , alpha , alpha ,4-tetrafluoro-N-methyl-m-toluidino)-6-((alpha , alpha , alpha ,4-tetrafluoro-m-tolyl)oxy)pyrimidine (sic) in **acetone** 1 mu l to the **bees** (50-52 **bees** were treated with each dose). The **bees** were placed in an incubator at 31 deg. C in the dark and fed sugar water for 5 days. When the dose applied was 8.0 mu g/**bee** the mortality rate for **bees** was 13% and the **parasites** 100%.

MECHANISM OF ACTION - None given.

USE - For the control of **parasitic** or saprophagous **mites** on beneficial insects.

ADVANTAGE - The method gives selective control of **parasitic** and saprophagous **mites** on beneficial insects and gives them protection from infestation and damage from the **mites**, with little or no concommitant harm to the beneficial insect.
Dwg.0/0

TI Method to control **parasitic** and saprophagous **mite** control on beneficial insects e.g. honey **bees**.

AB EP 972447 UPAB: 20000218
NOVELTY - A method for the protection of beneficial insects from infestation or saprophagous **mites** comprises applying to the insects, their breeding ground or habitat, a **parasitically** effective amount of a mitochondrial electron transport inhibitor or a pyrimidine (I).

DETAILED DESCRIPTION - A method for the protection of beneficial insects from infestation or saprophagous **mites** comprises applying to the insects or **mites**, their breeding ground or habitat, a **parasitically** effective amount of a mitochondrial electron transport inhibitor or a pyrimidine of formula (I).

X1, X2 = O, S(O)n, CO,. . . provided that when R6 is 1-6C alkyl, then R5 = H.

ACTIVITY - Antiparasitic; Antihelmintic. The efficiency of (I) against **Varroa** jacobsoni **parasites** (70% infestation) on **Apis** mellifera (honey **bees**) was evaluated by applying 4-(alpha , alpha , alpha ,4-tetrafluoro-N-methyl-m-toluidino)-6-((alpha , alpha , alpha ,4-tetrafluoro-m-tolyl)oxy)pyrimidine (sic) in

acetone 1 mu l to the **bees** (50-52 **bees** were treated with each dose). The **bees** were placed in an incubator at 31 deg. C in the dark and fed sugar water for 5 days. When the dose applied was 8.0 mu g/**bee** the mortality rate for **bees** was 13% and the **parasites** 100%.

MECHANISM OF ACTION - None given.

USE - For the control of **parasitic** or saprophagous **mites** on beneficial insects.

ADVANTAGE - The method gives selective control of **parasitic** and saprophagous **mites** on beneficial insects and gives them protection from infestation and damage from the **mites,** with little or no concommitant harm to the beneficial insect.

Dwg.0/0

TECH. . . .
from pyrazole carboxamides, quinones, thioureas, quinazolines, pyridazinones and pyrimidinamines. The beneficial insects are Hymenoptera (especially Apidae), Diptera or Lepidoptera. The **parasitic mites** are Varroi jacobsoni, **Acarapis** woodi and Tropilaelaps clareae.

TT TT: METHOD CONTROL **PARASITIC MITE** CONTROL BENEFICIAL INSECT HONEY **BEE**.

L7 ANSWER 25 OF 85 CROPU COPYRIGHT 2004 THOMSON DERWENT on STN
AN 2000-90378 CROPU C G I
TI 4-Methoxy-2,3,5,6-tetrafluorobenzyl 3-(2,2-difluorovinyl) 2,2-dimethyl cyclopropanecarboxylate, useful as a **pesticide**.
IN Iwasaki T; Matsuo N
PA Sumitomo
LO Osaka, Jap.
PI WO 2000046178 A1 20000810
AI JP 1999-28891 19990205
WO 2000-JP28 20000106
DT Patent
LA English
OS WPI: 2000-524406
FA AB; LA; CT; MPC
AB A new difluorovinyl pyrethrin analog (I) is claimed as a **pesticide**.The compound was prepared as (1R), (1RS) and (1S) isomers, characterized by PMR data, and formulated e.g. as an emulsifiable concentrate containing 20% (wt) (I), 65% xylene and 15% Sorpol 3005X. In an example, (I) (0.002 vol%) in **acetone** (0.64 ml) was placed in an aluminum dish and was air dried. Ten female mosquitoes (Culex pipiens pallens) were placed in a cup covered with 16-mesh nylon, which was placed mesh side down onto the treated aluminum surface at 25 deg for 2 hr.The cup was then removed and the insects were fed and watered for 24 hr. The mortality after 24 hr was 100%. A comparable test with a prior art ester gave a 24 hr mortality rate of 35%. The knockdown rate (60 min) was 100%. The agent also showed activity against Tineola bisselliella in a polyethylene cup.
TI 4-Methoxy-2,3,5,6-tetrafluorobenzyl 3-(2,2-difluorovinyl) 2,2-dimethyl cyclopropanecarboxylate, useful as a **pesticide**.
AB A new difluorovinyl pyrethrin analog (I) is claimed as a **pesticide**.The compound was prepared as (1R), (1RS) and (1S) isomers, characterized by PMR data, and formulated e.g. as an emulsifiable concentrate containing 20% (wt) (I), 65% xylene and 15% Sorpol 3005X. In an example, (I) (0.002 vol%) in **acetone** (0.64 ml) was placed in an aluminum dish and was air dried. Ten female mosquitoes (Culex pipiens pallens) were placed. . .
ABEX The compound is claimed as a **pesticide**, insecticide, **acaricide** and insect repellent. It is claimed to kill, repel and control the spread of Lepidoptera (moths), Diptera (flies), Dictyoptera (cockroaches), Hymenoptera (ants, wasps and **bees**), Siphonaptera

e.g. Pulex irritans, Anoplura (lice), Isoptera (termites), **Acarina** (**mites** and ticks), Hemiptera (aphids), Coleoptera (beetles and weevils), Thysanoptera (thrips) and Orthoptera (locusts). It is a more effective broad spectrum **pesticide** than other ester **pesticides**. (35

L7 ANSWER 26 OF 85 CROPU COPYRIGHT 2004 THOMSON DERWENT on STN
AN 2000-84096 CROPU I G
TI Method to control **parasitic mites** on beneficial insects e.g. Apidae.
IN Black B C; Baubach W R; Beluch M P
PA Am.Cyanamid
LO Madison, N.J., USA
PI EP 972448 A2 20000119
AI US 1998-115787 19980714
EP 1999-305410 19990707
DT Patent
LA English
OS WPI: 2000-099724
FA AB; LA; CT
AB A method for the protection of beneficial insects, such as **honeybees**, from infestation and damage caused by **parasitic mites**, by application of tebufenpyrad (TEB) to the insects or **mites**, their brood chamber or habitat, is claimed. In **acaricidal** bioassays, **honeybees** infested with 70-90% **Varroa** jacobsoni received topical application of TEB (0.006, 0.06 and 0.6 ug/**bee**). Treated **bees** were placed in an incubator at 31 deg in the dark and fed a 50% sugar solution for 5 days; at 0.6 ug/**bee**, mortality rates for **bees** and **mites** were 28% and 92%, resp. **Honeybees** infested with **Acarapis** woodi were treated with 500 ppm TEB in **acetone**; 100% **mite** mortality occurred after 8-8.5 min. Field tests with two V. jacobsoni infested hives, sticky boards treated with 18% TEB in beeswax/lard base were placed in the hives; one day after treatment, **mite** counts of 1777 and 1080 **mites**/day were recorded.
TI Method to control **parasitic mites** on beneficial insects e.g. Apidae.
AB A method for the protection of beneficial insects, such as **honeybees**, from infestation and damage caused by **parasitic mites**, by application of tebufenpyrad (TEB) to the insects or **mites**, their brood chamber or habitat, is claimed. In **acaricidal** bioassays, **honeybees** infested with 70-90% **Varroa** jacobsoni received topical application of TEB (0.006, 0.06 and 0.6 ug/**bee**). Treated **bees** were placed in an incubator at 31 deg in the dark and fed a 50% sugar solution for 5 days; at 0.6 ug/**bee**, mortality rates for **bees** and **mites** were 28% and 92%, resp. **Honeybees** infested with **Acarapis** woodi were treated with 500 ppm TEB in **acetone**; 100% **mite** mortality occurred after 8-8.5 min. Field tests with two V. jacobsoni infested hives, sticky boards treated with 18% TEB in beeswax/lard base were placed in the hives; one day after treatment, **mite** counts of 1777 and 1080 **mites**/day were recorded.
ABEX The method is claimed especially for the control of **parasitic mites**, such as, V. jacobsoni, A. woodi and Tropilaelaps clareae. The claimed advantage is that the method can be used with. . .
CT TEBUFENPYRAD *TR; **BEE *TR**; **APIS *TR**; APIDAE *TR; **VARROA *TR**; JACOBSONI *TR; **ACARAPIS *TR**; WOODI *TR; HYMENOPTERA *TR; TARSONEMIDAE *TR; **ACARINA *TR**; MK-239 *RN; **ACARICIDE *FT**; TOPICAL *FT; DOSAGE *FT; BIOASSAY *FT; FORMULATION *FT; WAX *FT; LARD *FT; STICKY *FT; BOARD *FT; HIVE *FT;

APPL.TECHNIQUE *FT; FOOD *FT; **ACARICIDES *FT**; INSECTICIDES
*FT; TR *FT

L7 ANSWER 27 OF 85 CABA COPYRIGHT 2004 CABI on STN
AN 2000:15353 CABA
DN 20001104998
TI Purification, characterisation, and inhibition by monoterpenes of acetylcholinesterase from the waxmoth, Galleria mellonella (L.)
AU Keane, S.; Ryan, M. F.
CS Department of Zoology, University College Dublin, Belfield, Dublin 4, Irish Republic.
SO Insect Biochemistry and Molecular Biology, (1999) Vol. 29, No. 12, pp. 1097-1104. 38 ref.
ISSN: 0965-1748
DT Journal
LA English
ED Entered STN: 20000208
Last Updated on STN: 20000208
AB Acetylcholinesterase (AChE) was purified from the brain of G. mellonella by affinity chromatography followed by anion exchange chromatography. It resolved as a single band by polyacrylamide gel electrophoresis (PAGE) both non-denaturing and SDS (silver stained), and as a single peak by high pressure liquid chromatography (HPLC), in an overall yield of 32% representing 283-fold purification. This was a true acetylcholinesterase, with no activity as a non-specific cholinesterase (butyrylcholinesterase). The molecular weight determined by PAGE in the absence and presence of sodium dodecyl sulphate (SDS) was ca. 240,000 Da and 60,000 Da respectively, indicating an arrangement of tetrameric subunits. **2 -Heptanone**, the **honeybee** alarm pheromone, reversibly and competitively inhibited the purified Galleria AChE with a Ki value of 1.34x10-3 M. Furthermore, five monoterpenes associated with plant defence and representing a range of functional groups, also were reversible competitive inhibitors of the purified AChE from Galleria, which is consistent with previous data for electric eel AChE.
AB . . . presence of sodium dodecyl sulphate (SDS) was ca. 240,000 Da and 60,000 Da respectively, indicating an arrangement of tetrameric subunits. **2-Heptanone**, the **honeybee** alarm pheromone, reversibly and competitively inhibited the purified Galleria AChE with a Ki value of 1.34x10-3 M. Furthermore, five monoterpenes. . .
CT acetylcholinesterase; characterization; monoterpenes; alarm pheromones; electrophoresis; honey **bees**; purification; insect **pests** ; biochemistry; enzymes; agricultural entomology

L7 ANSWER 28 OF 85 CABA COPYRIGHT 2004 CABI on STN
AN 1998:62020 CABA
DN 19980200458
TI Determination of the fungicide vinclozolin in honey and **bee** larvae by solid-phase and solvent extraction with gas chromatography and electron-capture and mass spectrometric detection
AU Bernal, J. L.; Nozal, M. J. del; Rivera, J. M.; Jimenez, J. J.; Atienza, J.
CS Department of Analytical Chemistry, Faculty of Sciences, University of Valladolid, Prado de la Magdalena s/n, E-47005, Valladolid, Spain.
SO Journal of Chromatography, (1996) Vol. 754, No. 102, pp. 507-513. Bb.
ISSN: 0021-9673
DT Journal
LA English
ED Entered STN: 19980512
Last Updated on STN: 19980512
AB Methods for the determination of vinclozolin in honey and in honey **bee** larvae are proposed. The fungicide can be extracted with an n-hexane/**acetone** (70:30 vol/vol) mixture, or by passage through

octadecylsilane (ODS) cartridges. Clean-up procedures (chromatography on Florisil or ODS columns) are described. Vinclozolin is quantified by capillary GC with electron-capture and MS detection. Recoveries from spiked samples (25 mg/kg) exceeded 90%.

TI Determination of the fungicide vinclozolin in honey and **bee** larvae by solid-phase and solvent extraction with gas chromatography and electron-capture and mass spectrometric detection.

AB Methods for the determination of vinclozolin in honey and in honey **bee** larvae are proposed. The fungicide can be extracted with an n-hexane/**acetone** (70:30 vol/vol) mixture, or by passage through octadecylsilane (ODS) cartridges. Clean-up procedures (chromatography on Florisil or ODS columns) are described.. . .

BT **Apis**; Apidae; Hymenoptera; insects; arthropods; invertebrates; animals

CT fungicides; nontarget effects; honey; **pesticide** residues; vinclozolin; analytical methods; gas chromatography; honey **bees**; larvae

ORGN **Apis** mellifera

L7 ANSWER 29 OF 85 CABA COPYRIGHT 2004 CABI on STN

AN 95:142258 CABA

DN 19951107959

TI Effects of diflubenzuron and penfluron on workers of **Apis** cerana indica F and **Apis** mellifera L

AU Gupta, P. R.; Chandel, R. S.

CS Department of Entomology, Dr YS Parmar University of Horticulture & Forestry, Nauni-173 230, Solan, India.

SO Apidologie, (1995) Vol. 26, No. 1, pp. 3-10. Bj. 24 ref.
ISSN: 0044-8435

DT Journal

LA English

SL German; French

ED Entered STN: 19950821
Last Updated on STN: 19950821

AB Newly emerged adult workers of **Apis** mellifera and A. cerana indica tolerated a topically applied dose of 10 [mu]g diflubenzuron (DF) and penfluron (PF) in **acetone** but the treated **bees** weighted less than control **bees** at 2 and 6 days of age. Oral administration of 100 [mu]g DF (as Dimilin 25% wettable powder) in 10 [mu]l sugar syrup proved fatal to A. c. indica. After 6 days of feeding 50 [mu]g DF, hypopharyngeal gland development, measured as size of acini, was significantly suppressed in both **bee** species. The suppressed gland development in the treated group could be a consequence of poor gain in weight. Foragers of both **bee** species readily accepted DF-contaminated sugar syrup and, with increasing doses, there was a decrease in the time required to consume the contaminated sugar syrup in a dose-dependent manner. The treated **bees** weighed significantly less than the control **bees**. Thus, at higher doses, chitin synthesis inhibitors may also prove harmful to adult **bees**.<new para>ADDITIONAL ABSTRACT:<new para>Newly emerged adult workers of A. mellifera and A. cerana tolerated a topically applied dose of 100 [micro]g diflubenzuron (DF) and penfluron (PF) in **acetone** but the treated **bees** weighed less than control **bees** at 2 and 6 d of age. Oral administration of 100 [micro]g DF (as Dimilin 25% wettable powder) in 10 [micro]l sugar syrup killed A. cerana. After 6 d of feeding 50 [micro]g DF, hypopharyngeal gland development, measured as size of acini, was significantly suppressed in both species. This could have been a consequence of poor gain in weight. Foragers of both species readily accepted DF-contaminated sugar syrup and, with increasing doses, the time required to consume the contaminated sugar syrup decreased in a dose-dependent manner. The treated **bees** weighed significantly less than the control **bees**. Thus, at higher doses chitin

synthesis inhibitors may prove harmful to adult **bees**.
TI Effects of diflubenzuron and penfluron on workers of **Apis** cerana indica F and **Apis** mellifera L.
AB Newly emerged adult workers of **Apis** mellifera and A. cerana indica tolerated a topically applied dose of 10 [mu]g diflubenzuron (DF) and penfluron (PF) in **acetone** but the treated **bees** weighted less than control **bees** at 2 and 6 days of age. Oral administration of 100 [mu]g DF (as Dimilin 25% wettable powder) in 10. . . 6 days of feeding 50 [mu]g DF, hypopharyngeal gland development, measured as size of acini, was significantly suppressed in both **bee** species. The suppressed gland development in the treated group could be a consequence of poor gain in weight. Foragers of both **bee** species readily accepted DF-contaminated sugar syrup and, with increasing doses, there was a decrease in the time required to consume the contaminated sugar syrup in a dose-dependent manner. The treated **bees** weighed significantly less than the control **bees**. Thus, at higher doses, chitin synthesis inhibitors may also prove harmful to adult **bees**.<new para>ADDITIONAL ABSTRACT:<new para>Newly emerged adult workers of A. mellifera and A. cerana tolerated a topically applied dose of 100 [micro]g diflubenzuron (DF) and penfluron (PF) in **acetone** but the treated **bees** weighed less than control **bees** at 2 and 6 d of age. Oral administration of 100 [micro]g DF (as Dimilin 25% wettable powder) in 10. . . and, with increasing doses, the time required to consume the contaminated sugar syrup decreased in a dose-dependent manner. The treated **bees** weighed significantly less than the control **bees**. Thus, at higher doses chitin synthesis inhibitors may prove harmful to adult **bees**.
BT insects; arthropods; invertebrates; animals; Hymenoptera; **Apis**; Apidae; **Apis** cerana
CT toxicity; insecticides; insect growth regulators; chitin synthesis inhibitors; beneficial insects; pollinators; nontarget effects; diflubenzuron; penfluron; effects; growth regulators; **pesticides** ; pollination; agricultural entomology; honey **bees**; body weight; hypopharyngeal glands; poisoning
ORGN Hymenoptera; Apidae; insects; **Apis** mellifera; **Apis** cerana indica; **Apis**; **Apis** cerana

L7 ANSWER 30 OF 85 CROPU COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1995-83061 CROPU I G
TI Effect of insects and insecticides on onion seed and broccoli seed production in southwest Arizona.
AU Rethwisch M D
CS Univ.Arizona
LO Parker, Ariz., USA
SO Hortscience (29, No. 12, 1409, 1994)
CODEN: HJHSAR
AV University of Arizona, Cooperative Extension, 2524 Mutahar, P.O. Box BL, Parker, AZ 85344, U.S.A.
DT Conference
LA English
FA AB; LA; CT
AB Effects of insecticides on seed crops of onion and broccoli were studied in 1991 and 1992. Onions were treated with Agri-**Mek** (avermectin B1), Ammo (cypermethrin), Capture (bifenthrin) or Lorsban (chlorpyrifos) to control Frankliniella occidentalis and Thrips tabaci, while broccoli was treated with Thiodan (endosulfan), CGA-215944 (pymetrozine) or 2 rates of RH-7988, to control Myzus persicae. In onion, all treatments except Agri-**Mek** decreased damage by T. tabaci, but only Ammo and Capture increased seed yield, and Lorsban and Agri-**Mek** reduced seed yield. In broccoli, all treatments reduced M. persicae, with RH-7988 most effective. All treatments reduced seed yields/plant, but increased % of large seed. (conference abstract).

AB. . . Effects of insecticides on seed crops of onion and broccoli were studied in 1991 and 1992. Onions were treated with Agri-**Mek** (avermectin B1), Ammo (cypermethrin), Capture (bifenthrin) or Lorsban (chlorpyrifos) to control Frankliniella occidentalis and Thrips tabaci, while broccoli was treated with Thiodan (endosulfan), CGA-215944 (pymetrozine) or 2 rates of RH-7988, to control Myzus persicae. In onion, all treatments except Agri-**Mek** decreased damage by T. tabaci, but only Ammo and Capture increased seed yield, and Lorsban and Agri-**Mek** reduced seed yield. In broccoli, all treatments reduced M. persicae, with RH-7988 most effective. All treatments reduced seed yields/plant, but. . .

ABEX. . . Ammo or Capture showed significant control, but only Ammo and capture increased seed yield, as Lorsban was thought to repel **bees**, reducing pollination. Ammo and Capture treatments yielded 40% more than untreated plants, which in turn yielded more than Lorsban and Agri-**Mek** treatments. Broccoli seed yield was higher with the lower rate of RH-7988 than with the higher rate; RH-988-treated plants yielded. . .

CT [01] AVERMECTIN-B1 *TR; AGRI-**MEK** *TR; ONION *TR; FRANKLINIELLA *TR; OCCIDENTALIS *TR; THRIPS *TR; TABACI *TR; VEGETABLE *TR; CROP *TR; THYSANOPTERA *TR; AVERMEB1 *RN; DECREASE *FT; ANTIBIOTICS *FT; INSECTICIDES *FT; **ACARICIDES** *FT; NEMATICIDES *FT; INSECT-CHEMOSTERILANTS *FT; TR *FT

[02] CYPERMETHRIN *TR; AMMO *TR; ONION *TR; FRANKLINIELLA *TR; OCCIDENTALIS *TR; THRIPS *TR;. . . FRANKLINIELLA *TR; OCCIDENTALIS *TR; THRIPS *TR; TABACI *TR; VEGETABLE *TR; CROP *TR; THYSANOPTERA *TR; BIPHENATE *RN; INCREASE *FT; INSECTICIDES *FT; **ACARICIDES** *FT; TR *FT

[04] CHLORPYRIFOS *TR; LORSBAN *TR; ONION *TR; FRANKLINIELLA *TR; OCCIDENTALIS *TR; THRIPS *TR; TABACI *TR; VEGETABLE *TR; CROP *TR; THYSANOPTERA *TR; CHLORPYRI *RN; DECREASE *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; TR *FT

[05] ENDOSULFAN *TR; THIODAN *TR; BROCCOLI *TR; MYZUS *TR;. . .

[03]. . . FRANKLINIELLA *TR; OCCIDENTALIS *TR; THRIPS *TR; TABACI *TR; VEGETABLE *TR; CROP *TR; THYSANOPTERA *TR; BIPHENATE *RN; INCREASE *FT; INSECTICIDES *FT; **ACARICIDES** *FT; TR *FT

[04] CHLORPYRIFOS *TR; LORSBAN *TR; ONION *TR; FRANKLINIELLA *TR; OCCIDENTALIS *TR; THRIPS *TR; TABACI *TR; VEGETABLE *TR; CROP *TR; THYSANOPTERA *TR; CHLORPYRI *RN; DECREASE *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; TR *FT

[05] ENDOSULFAN *TR; THIODAN *TR; BROCCOLI *TR; MYZUS *TR;. . .

[04]. . . FRANKLINIELLA *TR; OCCIDENTALIS *TR; THRIPS *TR; TABACI *TR; VEGETABLE *TR; CROP *TR; THYSANOPTERA *TR; CHLORPYRI *RN; DECREASE *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; TR *FT

[05] ENDOSULFAN *TR; THIODAN *TR; BROCCOLI *TR; MYZUS *TR;. . .

L7 ANSWER 31 OF 85

AN 96:455 CABA
DN 19950201519

TI Methyl palmitate does not elicit invasion of **honeybee** brood cells by **Varroa mites**

AU Boot, W. J.
CS Department of Pure and Applied Ecology, Section Population Biology, University of Amsterdam, Kruislaan 320, 1098 SM Amsterdam, Netherlands.

SO Experimental & Applied Acarology, (1994) Vol. 18, No. 10, pp. 587-592. Bb. ISSN: 0168-8162
DT Journal
LA English
ED Entered STN: 19960126

Last Updated on STN: 19960126
AB A special 'half-comb' with a transparent base was used in these trials so that worker brood cells could be inspected every 2 h for invasion by **mites**. Test cells were treated with 2[micro]l of 10, 1 or 0.1% methyl palmitate in **acetone**, or with pure **acetone**. Numbers of **mites** invading treated cells were similar to those in untreated cells in all trials except one; in the 0-6 h preceding capping, cells treated with 0.1% methyl palmitate had more **mites** than control cells. Higher doses of methyl palmitate killed some or all larvae. It is concluded that this compound does not (as has been suggested) serve as an attractant to **mites**. Further, an unpublished analysis of volatiles from brood cells that attracted **mites** established that methyl palmitate was present as a trace in only 2 of 17 samples.
TI Methyl palmitate does not elicit invasion of **honeybee** brood cells by **Varroa mites**.
AB . . . base was used in these trials so that worker brood cells could be inspected every 2 h for invasion by **mites**. Test cells were treated with 2[micro]l of 10, 1 or 0.1% methyl palmitate in **acetone**, or with pure **acetone**. Numbers of **mites** invading treated cells were similar to those in untreated cells in all trials except one; in the 0-6 h preceding capping, cells treated with 0.1% methyl palmitate had more **mites** than control cells. Higher doses of methyl palmitate killed some or all larvae. It is concluded that this compound does not (as has been suggested) serve as an attractant to **mites**. Further, an unpublished analysis of volatiles from brood cells that attracted **mites** established that methyl palmitate was present as a trace in only 2 of 17 samples.
BT **Apis**; Apidae; Hymenoptera; insects; arthropods; invertebrates; animals; **Varroa**; Varroidae; Mesostigmata; **mites**; **Acari**; Arachnida
CT beneficial insects; ectoparasites; **pests**; honey **bees**; honey **bee** brood; invasion; larvae; esters
ORGN **Apis** mellifera; **Varroa** jacobsoni

L7 ANSWER 32 OF 85 CABA COPYRIGHT 2004 CABI on STN DUPLICATE 7
AN 96:483 CABA
DN 19950201547
TI Laboratory toxicology of six forestry insecticides to four species of **bee** (Hymenoptera: Apoidea)
AU Helson, B. V.; Barber, K. N.; Kingsbury, P. D.
CS Forest Pest Management Institute, 1219 Queen Street East, PO Box 490, Sault Ste. Marie, Ontario, P6A 5M7, Canada.
SO Archives of Environmental Contamination and Toxicology, (1994) Vol. 27, No. 1, pp. 107-114. Bc. 50 ref.
ISSN: 0090-4341
DT Journal
LA English
ED Entered STN: 19960126
Last Updated on STN: 19960126
AB Laboratory dose-response studies were conducted with 4 species of adult **bees**, **Apis** mellifera (workers), Andrena erythronii (females), Megachile rotundata (females) and Bombus terricola (workers), using 6 insecticides (permethrin, mexacarbate, aminocarb, fenitrothion, carbaryl, and trichlorfon). All insecticides were applied topically to the thorax of the **bees** as technical grade in an **acetone** carrier. Mortality was accumulated over 48 h, and probit analyses were conducted separately on data sets expressed in units of [micro]gAI (active ingredient)/g body weight and of [micro]gAI/**bee**. LD50 values with 95% confidence limits and slopes with standard errors are provided for each **bee**/insecticide combination in each data set. Relative toxicities, relative susceptibilities, and fresh body weights are also provided. The analysis in units of [micro]gAI/g body weight indicated that

the insecticides could be ranked in order of decreasing toxicity - permethrin, mexacarbate, aminocarb, fenitrothion, carbaryl and trichlorfon. Likewise, the **bees** ranked from the most to least susceptible in the order A. mellifera, A. erythronii, M. rotundata and B. terricola. Trends within the data set for units of [micro]gAI/**bee** were less consistent. The data are discussed and compared with other published data on the toxicology of insecticides to **bees**.<new para>ADDITIONAL ABSTRACT:<new para>Laboratory dose-response studies were conducted with 4 species of adult **bees**, **Apis** mellifera (workers), Andrena erythronii (females), Megachile rotundata (females) and Bombus terricola (workers) using the insecticides permethrin, mexacarbate, aminocarb, fenitrothion, carbaryl and trichlorfon. All insecticides were applied topically to the thorax of **bees** as technical grade in **acetone**. Cumulative mortality was assessed over 48 h and probit analyses were conducted seperately on data sets expressed in units of [micro]g/a.i. per g body weight and [micro]g a.i./**bee**. Relative toxicities, relative susceptibilities and fresh body weights were also calculated. The analysis in units of [micro]g a.i./g body weight indicated that the insecticides were typically ranked in the order of decreasing toxicity permethrin < mexacarbate < aminocarb < fenitrothion < carbaryl < trichlorfon. **Bees** ranked from the most to the least susceptible in the order **Apis** mellifera > Andrena erythronii > M. rotundata > B. terricola. Trends within the data sets for units of [micro]g a.i./ **bee** were less consistent. The data are discussed and compared with other published data on the toxicology of insecticides to **bees** and from the perspective of risk assessment.

TI Laboratory toxicology of six forestry insecticides to four species of **bee** (Hymenoptera: Apoidea).

AB Laboratory dose-response studies were conducted with 4 species of adult **bees**, **Apis** mellifera (workers), Andrena erythronii (females), Megachile rotundata (females) and Bombus terricola (workers), using 6 insecticides (permethrin, mexacarbate, aminocarb, fenitrothion, carbaryl, and trichlorfon). All insecticides were applied topically to the thorax of the **bees** as technical grade in an **acetone** carrier. Mortality was accumulated over 48 h, and probit analyses were conducted separately on data sets expressed in units of [micro]gAI (active ingredient)/g body weight and of [micro]gAI/**bee**. LD50 values with 95% confidence limits and slopes with standard errors are provided for each **bee**/insecticide combination in each data set. Relative toxicities, relative susceptibilities, and fresh body weights are also provided. The analysis in units. . . the insecticides could be ranked in order of decreasing toxicity - permethrin, mexacarbate, aminocarb, fenitrothion, carbaryl and trichlorfon. Likewise, the **bees** ranked from the most to least susceptible in the order A. mellifera, A. erythronii, M. rotundata and B. terricola. Trends within the data set for units of [micro]gAI/**bee** were less consistent. The data are discussed and compared with other published data on the toxicology of insecticides to **bees**.<new para>ADDITIONAL ABSTRACT:<new para>Laboratory dose-response studies were conducted with 4 species of adult **bees**, **Apis** mellifera (workers), Andrena erythronii (females), Megachile rotundata (females) and Bombus terricola (workers) using the insecticides permethrin, mexacarbate, aminocarb, fenitrothion, carbaryl and trichlorfon. All insecticides were applied topically to the thorax of **bees** as technical grade in **acetone**. Cumulative mortality was assessed over 48 h and probit analyses were conducted seperately on data sets expressed in units of [micro]g/a.i. per g body weight and [micro]g a.i./**bee**. Relative toxicities, relative susceptibilities and fresh body weights were also calculated. The analysis in units of [micro]g a.i./g body weight. . . were typically ranked in the order of decreasing toxicity permethrin < mexacarbate < aminocarb < fenitrothion < carbaryl < trichlorfon. **Bees** ranked from the most to the least susceptible in the order

Apis mellifera > Andrena erythronii > M. rotundata > B. terricola. Trends within the data sets for units of [micro]g a.i./**bee** were less consistent. The data are discussed and compared with other published data on the toxicology of insecticides to **bees** and from the perspective of risk assessment.

BT Hymenoptera; insects; arthropods; invertebrates; animals; Apidae; Megachile; Megachilidae; Andrenidae; **Apis**; Bombus

CT beneficial insects; nontarget effects; insecticides; forestry; toxicity; honey **bees**; permethrin; mexacarbate; aminocarb; fenitrothion; trichlorfon; carbaryl; pollinators; social insects; **pesticides**; pollination; agricultural entomology

ORGN Apidae; Bombus; Megachile rotundata; Andrena; insects; Hymenoptera; **Apis** mellifera

L7 ANSWER 33 OF 85 WPIDS

AN 1993-243237 [30] WPIDS

CR 1993-133729 [16]

DNC C1993-108459

TI Determining **pesticides** - by incubating sample with insect brain material, adding D-luciferin deriv. with ATP and luciferase, and measuring the luminescence liberated.

DC C07 D16 J04

IN CHARM, S E; SAUL, S; ZOMER, E

PA (CHAR-N) CHARM SCI INC

CYC 21

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PI  WO 9314222     A1 19930722 (199330)* EN   27p
       RW: AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE
        W: AU CA JP
    AU 9335846     A  19930803 (199348)
    EP 576667      A1 19940105 (199402)  EN
        R: BE CH DE FR GB IE IT LI NL SE
    US 5283180     A  19940201 (199406)        7p
    JP 06505880    W  19940707 (199431)        8p
    US 5374534     A  19941220 (199505)        7p
    US 5374535     A  19941220 (199505)        6p
    AU 667518      B  19960328 (199622)
    CA 2105770     C  19980922 (199848)
    EP 576667      B1 20010404 (200120)  EN
        R: BE CH DE FR GB IE IT LI NL SE
    DE 69330077    E  20010510 (200134)
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ADT WO 9314222 A1 WO 1993-US436 19930107; AU 9335846 A AU 1993-35846 19930107, WO 1993-US436 19930107; EP 576667 A1 EP 1993-904519 19930107, WO 1993-US436 19930107; US 5283180 A CIP of US 1990-556952 19900719, US 1992-818782 19920109; JP 06505880 W JP 1993-512696 19930107, WO 1993-US436 19930107; US 5374534 A CIP of US 1990-556952 19900719, Div ex US 1992-818782 19920109, Div ex US 1993-7572 19930122, US 1993-62315 19930514; US 5374535 A CIP of US 1990-556952 19900719, Div ex US 1992-818782 19920109, US 1993-125935 19930923; AU 667518 B AU 1993-35846 19930107; CA 2105770 C CA 1993-2105770 19930107; EP 576667 B1 EP 1993-904519 19930107, WO 1993-US436 19930107; DE 69330077 E DE 1993-630077 19930107, EP 1993-904519 19930107, WO 1993-US436 19930107

FDT AU 9335846 A Based on WO 9314222; EP 576667 A1 Based on WO 9314222; US 5283180 A CIP of US 5200311; JP 06505880 W Based on WO 9314222; US 5374534 A CIP of US 5200311, Div ex US 5283180; US 5374535 A CIP of US 5200311, Div ex US 5283180; AU 667518 B Previous Publ. AU 9335846, Based on WO 9314222; EP 576667 B1 Based on WO 9314222; DE 69330077 E Based on EP 576667, Based on WO 9314222

PRAI US 1992-818782 19920109

AB WO 9314222 A UPAB: 20010620
Determn. of the concn. of organophosphate and carbanate **pesticides** in a test sample comprises: (a) incubating a test sample and an insect brain material; (b) adding a D-luciferin deriv. being inhibited towards

hydrolysis in the presence of the **pesticide**; (c) incubating the D-luciferin derif. mixt. to liberate D-luciferin; (d) adding a reaction mixt. of adenosine triphosphate ATS and luciferase to a portion of the D-luciferin mixt. to give oxyluciferin and emitted luminescence; (e) measuring the emitted luminescence during a defined time period; and (f) determining the concn. of the **pesticide** in the test sample by comparing the emitted measured luminescence with the luminescence of a control sample or standard.

Luciferin derivs. of formula (I) are also claimed where R = a monovalent organic radical chosen from 1-6C alkyl and benzyl. A test kit comprising the substances and devices necessary for carrying out steps (a)-(f) is also claimed.

USE/ADVANTAGE - The method is a rapid and sensitive method for the multiple detection of organophosphate and carbonate **pesticides** using the brains of organisms sensitive to these **pesticides**. The insect brain prepns. have a mixt. of receptors or enzymes with sites capable of interacting with the organophosphate and carbonate **pesticides**. The hydrolysis of the luciferin deriv. to luciferin by the brain preparation is extremely sensitive to organophosphates and carbamates, being inhibited in their presence. The luciferin liberated is oxidised by the luciferase and ATP and emits light which can be measured as bio- or chemi-luminescence, and compared with a standard. The method is capable of determining **pesticide** concns. of 50 ppb or lower.

One cpd. (I) namely lucifin acetate is specifically claimed.

Dwg.0/0
Dwg.0/0
Dwg.0/0

TI Determining **pesticides** - by incubating sample with insect brain material, adding D-luciferin deriv. with ATP and luciferase, and measuring the luminescence liberated.

AB WO 9314222 UPAB: 20010620

Determn. of the concn. of organophosphate and carbanate **pesticides** in a test sample comprises: (a) incubating a test sample and an insect brain material; (b) adding a D-luciferin deriv. being inhibited towards hydrolysis in the presence of the **pesticide**; (c) incubating the D-luciferin derif. mixt. to liberate D-luciferin; (d) adding a reaction mixt. of adenosine triphosphate ATS and luciferase. . . . and emitted luminescence; (e) measuring the emitted luminescence during a defined time period; and (f) determining the concn. of the **pesticide** in the test sample by comparing the emitted measured luminescence with the luminescence of a control sample or standard.

Luciferin. . . . also claimed.

USE/ADVANTAGE - The method is a rapid and sensitive method for the multiple detection of organophosphate and carbonate **pesticides** using the brains of organisms sensitive to these **pesticides**. The insect brain prepns. have a mixt. of receptors or enzymes with sites capable of interacting with the organophosphate and carbonate **pesticides**. The hydrolysis of the luciferin deriv. to luciferin by the brain preparation is extremely sensitive to organophosphates and carbamates, being. . . . light which can be measured as bio- or chemi-luminescence, and compared with a standard. The method is capable of determining **pesticide** concns. of 50 ppb or lower.

One cpd. (I) namely lucifin acetate is specifically claimed.

Dwg.0/0
Dwg.0/0
Dwg.0/0

ABEQ US 5283180 UPAB: 19940322

Determn. of organophosphate and/or carbamate **pesticide** comprises incubating a water, soil or food test sample with insect brain extracts for 2-10 mins.; further incubation after addn.. . . . emitted luminescence, comparing with results obtd. using standard solns. of organophosphate or carbamate.

Pref., insect brain material comprises homogenated honey **bee** heads.

USE/ADVANTAGE - The process facilitates the determn. of environmental **pesticides** to meet health and safety requirements. The process is rapid and very sensitive (to 50 ppb or less).

Dwg.0/0

ABEQ. . . .
an alkyl, benzyl or phenyl substd. cpd. or is N-acetyl imidazole. Reaction is in a water-solvent mixt., water or an **acetone** water solvent. Pref. the method also includes monitoring the decrease in bioluminescence of the luciferin as a measure of completeness of the reaction.

Esp., the luciferin is synthetic.

USE - (I) Are used in determination of **pesticides** by bioluminescence. They are pref. used to determine organophosphate and carbamate type **pesticides** at levels below 50 ppb.

Dwg.0/0

ABEQ US 5374535 UPAB: 19950207
A test kit for bioluminescent determn. of the concn. of organophosphate and carbamate **pesticides** in a sample comprises (a) an insect brain material (from honey **bees**, silkworms, blow flies or mixts. of these) which hydrolyses a 6-substd. D luciferin ester (I) (pref. a 6-substd. acetyl D luciferin ester) to D luciferin (II). (This hydrolysis is inhibited by **pesticides**).

(b) The cpd. (I). (c) Luciferase and adenosine triphosphate which react with cpd. (II) to yield oxyluciferin and bioluminescence, (d). . . . means to measure bioluminescence, and (f) a control sample for comparison of the measured bioluminescence.

USE - For detection of **pesticide** residues in water, soil, food, etc.

Dwg.0/0

TT TT: DETERMINE **PEST** INCUBATE SAMPLE INSECT BRAIN MATERIAL ADD LUCIFERIN DERIVATIVE ATP LUCIFERASE MEASURE LUMINESCENT LIBERATING.

L7 ANSWER 34 OF 85 CROPU COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1993-85470 CROPU I G
TI Pear, Summer Control of Pear Psylla and Pear Rust **Mite**, 1992.
AU Johnson J W; Wise J C
LO Fennville, Mich., USA
SO Insectic.Acaric.Tests (18, 62-63, 1993) 4 Tab.
AV Department of Entomology, Michigan State University, East Lansing, MI 48824-1115, U.S.A.
DT Journal
LA English
FA AB; LA; CT
AB Bartlett pear trees were sprayed with the following treatments (rate/A) for control of Cacopsylla (Psylla) pyricola (Cp) and Epitrimerus pyri (Ep): Kelthane 35W (dicofol, 1.5 lb) applied on 6 May (white bud) and 14 May (petal fall) followed by Mitac 1.5EC (amitraz; 1 gal) on 8 June (2nd cover) and 2 July (4th cover); Agri-**Mek** 0.15EC (avermectin-b1, 20 oz) + Sun Ultra Fine Spray Oil (mineral oil, 1 gal) and Agri-**Mek** 0.15EC (10 oz) + M-Pede (insecticidal soap, 2% v/v) on 27 May (1st cover); and Danitol 2.4EC (fenpropathrin, 0.4 lb) and Kelthane 35WP (2.1 lb) on 6 May (white bud), 27 May (1st cover) and 22 June (3rd cover). Kelthane followed by Mitac provided the highest % of fruit free from Ep russeting and the highest control of Cp. Danitol plots had the highest incidence of sooty mold injury.
TI Pear, Summer Control of Pear Psylla and Pear Rust **Mite**, 1992.
AB. . . May (petal fall) followed by Mitac 1.5EC (amitraz; 1 gal) on 8 June (2nd cover) and 2 July (4th cover); Agri-**Mek** 0.15EC (avermectin-b1, 20 oz) + Sun Ultra Fine Spray Oil (mineral oil, 1 gal) and Agri-**Mek** 0.15EC (10 oz) + M-Pede (insecticidal soap, 2% v/v) on 27 May (1st cover); and Danitol 2.4EC (fenpropathrin, 0.4 lb). .

ABEX All treatments were applied with an FMC 1029 airblast sprayer delivering 10092 L/A of finished spray. Streptomycin, ferbam, **Bee**-scent and dodine were applied to all treatments separately. Cp and Ep counts were conducted on 20 May, 2, 9, 16. . . .

CT. . . PSYLLA *TR; PYRICOLA *TR; EPITRIMERUS *TR; PYRI *TR; POMACEOUS-FRUIT *TR; FRUIT-CROP *TR; CROP *TR; PSYLLIDAE *TR; HOMOPTERA *TR; ERIOPHYIDAE *TR; **ACARINA** *TR; STREPTOMYCIN *RC; DODINE *RC; FERBAM *RC; **BEE**-SCENT *RC; FIELD *FT; ORCHARD *FT; MICH. *FT; SPRAY *FT; APPL.TIME *FT; POPULATION-DENSITY *FT; DECREASE *FT; PERSISTENCE *FT; DOSAGE *FT; INSECTICIDE *FT; **ACARICIDE** *FT; NYMPH *FT; EGG *FT; ADULT *FT; NO. *FT; FRUIT *FT; YIELD *FT; QUALITY *FT; DAMAGE *FT; USA *FT; AREA-AMERICA. . . .

[01] AMITRAZ *TR; MITAC *TR; AMITRAZ *RN; EMULSION *FT; COVER *FT; SEQUENTIAL *FT; REPEAT *FT; FORMULATION *FT; APPL.SCHEDULE *FT; **ACARICIDES** *FT; INSECTICIDES *FT; TICK-REPELLENTS *FT; TR *FT

[02] DICOFOL *TR; KELTHANE *TR; DICOFOL *RN; WETTABLE-POWDER *FT; FULL-PINK *FT; PETAL-FALL *FT; REPEAT *FT; SEQUENTIAL *FT; WETTABLE *FT; FORMULATION *FT; APPL.SCHEDULE *FT; **ACARICIDES** *FT; TR *FT

[03] AVERMECTIN-B1 *TR; AGRI-**MEK** *TR; AVERMEB1 *RN; EMULSION *FT; COVER *FT; COMB. *FT; FORMULATION *FT; ANTIBIOTICS *FT; INSECTICIDES *FT; **ACARICIDES** *FT; NEMATICIDES *FT; INSECT-CHEMOSTERILANTS *FT; TR *FT

[04] MINERAL-OIL *TR; SUNSPRAY-ULTRA-FINE-SPRAY-OIL *TR; MINERLOIL *RN; COMB. *FT; COVER *FT; INSECTICIDES *FT; **ACARICIDES** *FT; FUNGICIDES *FT; HERBICIDES *FT; ADDITIVES *FT; TR *FT

[05] INSECTICIDAL-SOAP *TR; M-PEDE *TR; INSECSOAP *RN; COMB. *FT; COVER *FT;. . . FENPROPATHRIN *TR; DANITOL *TR; FENPROPAT *RN; EMULSION *FT; COVER *FT; FULL-PINK *FT; REPEAT *FT; FORMULATION *FT; APPL.SCHEDULE *FT; INSECTICIDES *FT; **ACARICIDES** *FT; TR *FT

[02]. . . KELTHANE *TR; DICOFOL *RN; WETTABLE-POWDER *FT; FULL-PINK *FT; PETAL-FALL *FT; REPEAT *FT; SEQUENTIAL *FT; WETTABLE *FT; FORMULATION *FT; APPL.SCHEDULE *FT; **ACARICIDES** *FT; TR *FT

[03] AVERMECTIN-B1 *TR; AGRI-**MEK** *TR; AVERMEB1 *RN; EMULSION *FT; COVER *FT; COMB. *FT; FORMULATION *FT; ANTIBIOTICS *FT; INSECTICIDES *FT; **ACARICIDES** *FT; NEMATICIDES *FT; INSECT-CHEMOSTERILANTS *FT; TR *FT

[04] MINERAL-OIL *TR; SUNSPRAY-ULTRA-FINE-SPRAY-OIL *TR; MINERLOIL *RN; COMB. *FT; COVER *FT; INSECTICIDES *FT; **ACARICIDES** *FT; FUNGICIDES *FT; HERBICIDES *FT; ADDITIVES *FT; TR *FT

[05] INSECTICIDAL-SOAP *TR; M-PEDE *TR; INSECSOAP *RN; COMB. *FT; COVER *FT;. . . FENPROPATHRIN *TR; DANITOL *TR; FENPROPAT *RN; EMULSION *FT; COVER *FT; FULL-PINK *FT; REPEAT *FT; FORMULATION *FT; APPL.SCHEDULE *FT; INSECTICIDES *FT; **ACARICIDES** *FT; TR *FT

[03] AVERMECTIN-B1 *TR; AGRI-**MEK** *TR; AVERMEB1 *RN; EMULSION *FT; COVER *FT; COMB. *FT; FORMULATION *FT; ANTIBIOTICS *FT; INSECTICIDES *FT; **ACARICIDES** *FT; NEMATICIDES *FT; INSECT-CHEMOSTERILANTS *FT; TR *FT

[04] MINERAL-OIL *TR; SUNSPRAY-ULTRA-FINE-SPRAY-OIL *TR; MINERLOIL *RN; COMB. *FT; COVER *FT; INSECTICIDES *FT; **ACARICIDES** *FT; FUNGICIDES *FT; HERBICIDES *FT; ADDITIVES *FT; TR *FT

[05] INSECTICIDAL-SOAP *TR; M-PEDE *TR; INSECSOAP *RN; COMB. *FT; COVER *FT;. . . FENPROPATHRIN *TR; DANITOL *TR; FENPROPAT *RN; EMULSION *FT; COVER *FT; FULL-PINK *FT; REPEAT *FT; FORMULATION *FT; APPL.SCHEDULE *FT; INSECTICIDES *FT; **ACARICIDES** *FT; TR *FT

[04] MINERAL-OIL *TR; SUNSPRAY-ULTRA-FINE-SPRAY-OIL *TR; MINERLOIL *RN; COMB. *FT; COVER *FT; INSECTICIDES *FT; **ACARICIDES** *FT; FUNGICIDES *FT; HERBICIDES *FT; ADDITIVES *FT; TR *FT

[05] INSECTICIDAL-SOAP *TR; M-PEDE *TR; INSECSOAP *RN; COMB. *FT; COVER *FT;. . . FENPROPATHRIN *TR; DANITOL *TR; FENPROPAT *RN; EMULSION *FT; COVER *FT; FULL-PINK *FT; REPEAT *FT; FORMULATION *FT; APPL.SCHEDULE *FT; INSECTICIDES *FT; **ACARICIDES** *FT; TR *FT

[06]. . . FENPROPATHRIN *TR; DANITOL *TR; FENPROPAT *RN; EMULSION *FT; COVER *FT; FULL-PINK *FT; REPEAT *FT; FORMULATION *FT; APPL.SCHEDULE *FT; INSECTICIDES *FT; **ACARICIDES** *FT; TR *FT

L7 ANSWER 35 OF 85 CABA COPYRIGHT 2004 CABI on STN
AN 93:111745 CABA
DN 19930234011
TI Toxicity of diflubenzuron and penfluron to immature stages of **Apis** cerana indica F. and **Apis** mellifera L
AU Chandel, R. S.; Gupta, P. R.
CS Department of Entomology and Apiculture, University of Horticulture and Forestry, Nauni 173 230, Solan, India.
SO Apidologie, (1992) Vol. 23, No. 5, pp. 465-473. Bj. 22 ref.
ISSN: 0044-8435
DT Journal
LA English
SL French; German
ED Entered STN: 19941101
Last Updated on STN: 19941101
AB The chitin synthesis inhibitors diflubenzuron and penfluron in **acetone** were found to be equally toxic to A. mellifera and A. cerana in topical application tests based on equivalent body weights. Toxicity resulting from median lethal dosage was highest for pupae and was lower for third- and fourth-instar larvae. **Acetone** was lethal to eggs and first- and second-instar larvae. There was no delayed lethal or morphological effect on larvae, but some adult **bees**, treated in the same manner as pupae, showed morphological abnormalities such as crumpled wings and poor interlocking at stylet and lancets of the sting apparatus. Feeding of 50 mg diflubenzuron to small colonies of both **bee** species enhanced egg laying but significantly reduced the amount of unsealed and sealed brood within 10 days of treatment.<new para>ADDITIONAL ABSTRACT:<new para>Diflubenzuron and penfluron were equally toxic to **Apis** mellifera and A. cerana indica. Toxicity was highest for pupae and lower for 4th- and 3rd-instar larvae. **Acetone** was lethal to eggs and 1st- and 2nd-instar larvae. Some adult **bees** showed morphological abnormalities. Feeding of 50 mg diflubenzuron to small experimental colonies of both **bee** species enhanced egg laying but significantly reduced the amount of unsealed and sealed brood within 10 days of treatment.
TI Toxicity of diflubenzuron and penfluron to immature stages of **Apis** cerana indica F. and **Apis** mellifera L.
AB The chitin synthesis inhibitors diflubenzuron and penfluron in **acetone** were found to be equally toxic to A. mellifera and A. cerana in topical application tests based on equivalent body weights. Toxicity resulting from median lethal dosage was highest for pupae and was lower for third- and fourth-instar larvae. **Acetone** was lethal to eggs and first- and second-instar larvae. There was no delayed lethal or morphological effect on larvae, but some adult **bees**, treated in the same manner as pupae, showed morphological abnormalities such as crumpled wings and poor interlocking at stylet and lancets of the sting apparatus. Feeding of 50 mg diflubenzuron to small colonies of both **bee** species enhanced egg laying but significantly reduced the amount of unsealed and sealed brood within 10 days of treatment.<new para>ADDITIONAL ABSTRACT:<new para>Diflubenzuron and penfluron were equally toxic to **Apis** mellifera and A. cerana indica. Toxicity was highest for pupae and lower for 4th- and 3rd-instar larvae. **Acetone** was lethal to eggs and 1st- and 2nd-instar larvae. Some adult **bees** showed morphological abnormalities. Feeding of 50 mg diflubenzuron to small experimental colonies of both **bee** species enhanced egg laying but significantly reduced the amount of unsealed and sealed brood within 10 days of treatment.
BT **Apis**; Apidae; Hymenoptera; insects; arthropods; invertebrates;

animals; **Apis** cerana
CT Poisoning; honey **bees**; diflubenzuron; penfluron; Toxicity; chitin synthesis inhibitors; effects; larvae; pupae; Insect growth regulators; Beneficial insects; Pollinators; Nontarget effects; Insecticides; growth regulators; **pesticides**; pollination; agricultural entomology
ORGN **Apis** cerana; Apidae; Hymenoptera; **Apis** mellifera; **Apis** cerana indica; **Apis**

L7 ANSWER 36 OF 85 CROPU COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1992-86568 CROPU I G L
TI Thrips Control in Seed Onions, 1991.
AU Rethwisch M D; Sanderson D; McDaniel C; Daily W
LO Yuma, Ariz., USA
SO Insectic.Acaric.Tests (17, 119, 1992) 1 Tab.
AV University of Arizona, Department of Entomology, Yuma Valley Agricultural Center, 6425 W. 8th Street, Yuma, AZ 85364, U.S.A.
DT Journal
LA English
FA AB; LA; CT
AB Red Creole seed onions were treated on 23 April with Agri-**Mek** 0.15EC (avermectin B1) + vegetable oil concentrate (0.01 lb + 6 oz/A), Ammo 2.5EC (cypermethrin, 0.1 lb/A), Capture 2EC (biphenate, 0.1 lb/A) and Lorsban 4E (chlorpyrifos, 1.0 lb/A) for control of western flower thrips (WFT, Frankliniella occidentalis) and onion thrips (OT, Thrips tabaci). **Bees** already were present in hives around the field, and flowers on umbels were beginning to open when treatments were applied.Browning of heads (thought to be due to poor OT control) occurred in check and Agri-**Mek** plots. Plants treated with Ammo and Capture were taller than plants in the other plots and had fuller seed heads. Plots treated with Ammo or Capture resulted in an increase of over 400 lbs of seed, valued at 1,400 U.S. dollars/A, compared to untreated check.
AB Red Creole seed onions were treated on 23 April with Agri-**Mek** 0.15EC (avermectin B1) + vegetable oil concentrate (0.01 lb + 6 oz/A), Ammo 2.5EC (cypermethrin, 0.1 lb/A), Capture 2EC (biphenate,. . . Lorsban 4E (chlorpyrifos, 1.0 lb/A) for control of western flower thrips (WFT, Frankliniella occidentalis) and onion thrips (OT, Thrips tabaci). **Bees** already were present in hives around the field, and flowers on umbels were beginning to open when treatments were applied.Browning of heads (thought to be due to poor OT control) occurred in check and Agri-**Mek** plots. Plants treated with Ammo and Capture were taller than plants in the other plots and had fuller seed heads.. . .
ABEX. . . of 2 thrips species. Lower yields were attributed to lack of OT control and some control of WFT, and possible **honeybee** repellency by the Lorsban treatment. Germination values were equal for all treatments.
CT [01] AVERMECTIN-B1 *TR; AGRI-**MEK** *TR; VEGETABLE-OIL-CONCENTRATE *TR; COMB.ADDITIVE *FT; ANTIBIOTICS *FT; INSECTICIDES *FT; **ACARICIDES** *FT; NEMATICIDES *FT; INSECT-CHEMOSTERILANTS *FT; AVERMEB1 *RN; TR *FT
[02] CYPERMETHRIN *TR; AMMO *TR; INSECTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT; CYPERMETH *RN; TR *FT
[03] BIPHENATE *TR; CAPTURE *TR; INSECTICIDES *FT; **ACARICIDES** *FT; BIPHENATE *RN; TR *FT
[04] CHLORPYRIFOS *TR; LORSBAN *TR; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; CHLORPYRI *RN; TR *FT
[03] BIPHENATE *TR; CAPTURE *TR; INSECTICIDES *FT; **ACARICIDES** *FT; BIPHENATE *RN; TR *FT
[04] CHLORPYRIFOS *TR; LORSBAN *TR; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT;

ORGANOPHOSPHORUS *FT; CHLORPYRI *RN; TR *FT
[04] CHLORPYRIFOS *TR; LORSBAN *TR; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; CHLORPYRI *RN; TR *FT

L7 ANSWER 37 OF 85 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1992:53706 CAPLUS
DN 116:53706
TI Hhoneybee repellents, for repulsion from **pesticide**-treated areas.
IN Holtmann, Heinrich
PA Germany
SO Ger. Offen., 5 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 4012224	A1	19911017	DE 1990-4012224	19900414
PRAI	DE 1990-4012224		19900414		

AB A **honeybee** repellent contains .gtoreq.1 substance, selected from alcs., phenol derivs., aldehydes, ethers, terpenes, etc. Some combinations of the substances are synergistic. Thus, a combination of benzyl acetate, n-BuOH, and verbenone (3.3 .times. 10-8 mL/ha of each compd.) showed 113% repellent activity to **Apis** mellifera, compared to 100% activity for individual components, applied at 1 .times. 10-5 mL/ha. The repellents are selective to **honeybee** without any side effect to **bees** and plants, and are environmentally safe. They may be used to repel **honeybees** from **pesticide** -treated areas.
TI Hhoneybee repellents, for repulsion from **pesticide**-treated areas.
AB A **honeybee** repellent contains .gtoreq.1 substance, selected from alcs., phenol derivs., aldehydes, ethers, terpenes, etc. Some combinations of the substances are synergistic. Thus, a combination of benzyl acetate, n-BuOH, and verbenone (3.3 .times. 10-8 mL/ha of each compd.) showed 113% repellent activity to **Apis** mellifera, compared to 100% activity for individual components, applied at 1 .times. 10-5 mL/ha. The repellents are selective to **honeybee** without any side effect to **bees** and plants, and are environmentally safe. They may be used to repel **honeybees** from **pesticide** -treated areas.
ST **honeybee** repellent
IT Insect repellents
(of **honeybee**, for repulsion from **pesticide**-treated areas)
IT **Honeybee**
(repellents of, for repulsion from **pesticide**-treated areas)
IT 50-00-0, Formaldehyde, biological studies 50-21-5, 2-Hydroxypropionic acid, biological studies 56-41-7, .alpha.-Alanine, biological studies 57-10-3, Palmitic acid, biological studies 57-11-4, Stearic acid, biological studies 57-55-6, 1,2-Propanediol, biological studies 60-29-7, Diethyl ether, biological studies 60-33-3, Linolic acid, biological studies 64-17-5, Ethanol, biological studies 64-18-6, Formic acid, biological studies 64-19-7, Acetic acid, biological studies 65-85-0, Benzoic acid, biological studies 67-56-1, Methanol, biological studies 67-63-0, 2-Propanol, biological studies **67-64-1**, **Acetone**, biological studies 67-66-3, Chloroform, biological studies 67-68-5, Dimethyl sulfoxide, biological studies 68-12-2, Dimethyl formamide, biological studies 71-23-8, 1-Propanol, biological studies 71-36-3, 1-Butanol, biological studies 71-41-0, 1-Pentanol,

biological studies 71-43-2, Benzene, biological studies 75-00-3, Ethyl chloride 75-07-0, Acetaldehyde, biological studies 75-09-2, Methylene chloride, biological studies 75-65-0, tert-Butanol, biological studies 75-84-3, Neopentyl alcohol 77-92-9, biological studies 78-70-6, Linalool 78-83-1, Iso-butanol, biological studies 78-92-2, 2-Butanol **78-93-3, 2-Butanone**, biological studies
79-01-6, Trichloroethylene, biological studies 79-09-4, Propanoic acid, biological studies 79-20-9, Methyl acetate 79-31-2, Isobutyric acid 80-48-8 80-56-8 80-57-9, Verbenone 84-66-2, Diethyl phthalate 90-01-7, Salicyl alcohol 90-02-8, Salicylaldehyde, biological studies 93-58-3, Methyl benzoate 95-48-7, o-Cresol, biological studies 96-22-0, Diethyl ketone 100-42-5, Styrene, biological studies 100-52-7, Benzaldehyde, biological studies 100-66-3, Anisole, biological studies 105-13-5, Anise alcohol 105-37-3, Ethyl propionate 105-54-4, Ethyl butyrate 105-68-0, Isopentyl propionate 106-23-0, Citronellal 106-24-1, Geraniol 106-27-4, Isopentyl butyrate 106-44-5, p-Cresol, biological studies 106-68-3, n-Amyl ethyl ketone 107-21-1, 1,2-Ethanediol, biological studies 107-92-6, Butanoic acid, biological studies 107-95-9, .beta.-Alanine 108-10-1, Methyl isobutyl ketone 108-39-4, m-Cresol, biological studies 108-46-3, Resorcinol, biological studies 108-67-8, 1,3,5-Trimethylbenzene, biological studies 108-88-3, Toluene, biological studies 108-91-8, Cyclohexyl amine, biological studies 108-94-1, Cyclohexanone, biological studies 108-95-2, Phenol, biological studies 109-21-7, Butyl butyrate 109-52-4, Valeric acid, biological studies 109-66-0, n-Pentane, biological studies 109-73-9, Butyl amine, biological studies 110-15-6, Succinic acid, biological studies 110-16-7, Maleic acid, biological studies 110-17-8, Fumaric acid, biological studies 110-39-4, Octyl butyrate **110-43-0, Methyl pentyl ketone** 110-54-3, n-Hexane, biological studies **111-13-7, Methyl hexyl ketone** 111-26-2, n-Hexyl amine 111-27-3, 1-Hexanol, biological studies 111-47-7, Dipropyl sulfide 111-70-6, 1-Heptanol 111-87-5, 1-Octanol, biological studies 112-06-1, Heptyl acetate 112-14-1, Octyl acetate 112-17-4, Decyl acetate 112-27-6 112-30-1, 1-Decanol 112-40-3, Dodecane 112-53-8, 1-Dodecanol 112-62-9, Methyl oleate 112-63-0, Methyl linoleate 112-80-1, Oleic acid, biological studies 112-86-7 112-92-5, 1-Octadecanol 115-10-6, Dimethyl ether 119-61-9, Benzophenone, biological studies 120-80-9, Catechol, biological studies **123-19-3, 4-Heptanone** 123-31-9, Hydroquinone, biological studies 123-38-6, Propionaldehyde, biological studies 123-51-3, Isoamyl alcohol 123-72-8, Butyraldehyde 123-86-4, Butyl acetate 123-91-1, Dioxane, biological studies 123-92-2, Isopentyl acetate 123-96-6, 2-Octanol 127-91-3 138-86-3, Dipentene 141-78-6, Ethyl acetate, biological studies 141-82-2, Malonic acid, biological studies 142-60-9, Octyl propionate 142-61-0, Hexanoic acid chloride 142-62-1, Capronic acid, biological studies 142-82-5, n-Heptane, biological studies 142-92-7, Hexyl acetate 143-07-7, Lauric acid, biological studies 143-08-8, 1-Nonanol 143-13-5, Nonyl acetate 143-28-2, cis-9-Octadecen-1-ol 144-62-7, Oxalic acid, biological studies 301-00-8, Methyl linolenate 334-20-3 334-48-5, Capric acid 463-40-1, Linolenic acid 470-82-6, Cineol 473-67-6, Verbenol 480-63-7, 2,4,6-Trimethylbenzoic acid 487-68-3, 2,4,6-Trimethylbenzaldehyde 505-57-7, 2-Hexenal 507-70-0, Borneol 538-32-9, N-Benzyl urea 540-18-1, Pentyl butyrate 543-49-7, 2-Heptanol 544-63-8, Myristic acid, biological studies 554-12-1, Methyl propionate 562-74-3, Terpinen-4-ol 584-02-1, 3-Pentanol 589-82-2, 3-Heptanol 590-01-2, Butyl propionate **591-78-6, Butyl methyl ketone** 593-08-8, 2-Tridecanone 623-37-0, 3-Hexanol 623-42-7, Methyl butyrate 624-54-4, Pentyl propionate 626-93-7, 2-Hexanol 628-02-4, Hexanamide 628-63-7, Pentyl acetate 628-99-9, 2-Nonanol 629-50-5, Tridecane 629-62-9, Pentadecane 629-96-9, n-Eicosanol 822-24-2, Eicosanyl acetate 872-50-4, N-Methyl pyrrolidone, biological

studies 928-94-9 928-95-0, trans-2-Hexenol 1007-32-5, Ethyl benzyl ketone 1120-06-5, 2-Decanol 1120-21-4, Undecane 1282-85-5, Isodecyl amine 1300-71-6, Xylenol 1330-20-7, Xylene, biological studies 1629-58-9, Ethyl vinyl ketone 1653-30-1, 2-Undecanol 2009-74-7 2051-49-2, Hexanoic acid anhydride 2216-81-1, Heptyl propionate 2425-54-9, 1-Chlorotetradecane 2445-76-3, Hexyl propionate 2639-63-6, Hexyl butyrate 2639-64-7, Nonyl butyrate 4602-84-0, Farnesol 5454-09-1, Decyl butyrate 5454-19-3, Decyl propionate 5870-93-9, Heptyl butyrate 6032-29-7, 2-Pentanol 6728-26-3, trans-Hexen-2-al 26444-03-1, Tetradecenoic acid 27576-03-0, Dimethylstyrene 28933-77-9, Hexenyl acetate 37366-04-4, Octenyl acetate 41927-66-6, Eicosanyl butyrate 53184-67-1, Nonyl propionate 65591-14-2, Eicosanyl propionate 67412-66-2, Decenyl acetate 81570-28-7, cis-Tricosenoic acid 138483-59-7, Nonenyl acetate
RL: BIOL (Biological study)
(**honeybee** repellent contg., for repulsion from **pesticide**-treated areas)

IT 138441-66-4, **Acetone**-benzyl acetate mixt. 138441-67-5 138441-68-6 138470-30-1
RL: BIOL (Biological study)
(synergistic repellent, for **honeybees**)

L7 ANSWER 38 OF 85 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1991:449168 CAPLUS

DN 115:49168

TI Direct formation and subsequent substitution of remote ketone-functionalized organocopper reagents

AU Ebert, Greg W.; Klein, Walter R.

CS Coll. Buffalo, State Univ. New York, Buffalo, NY, 14222, USA

SO Journal of Organic Chemistry (1991), 56(15), 4744-7
CODEN: JOCEAH; ISSN: 0022-3263

DT Journal

LA English

OS CASREACT 115:49168

AB Remote ketone-functionalized aryl- and alkylcopper reagents were synthesized by the use of a highly activated form of zero-valent copper. 5-Bromo-**2-pentanone** and 4-iodobenzophenone undergo oxidative addn. with activated copper to form 5-cuprio-**2-pentanone** and 4-cupriobenzophenone, resp. These, in turn, can be cross-coupled with alkyl halides to produce the corresponding alkylated ketones and with acid chlorides to form the corresponding diketones. By use of this methodol., a two-step, one-pot synthesis of Me (E)-9-oxo-2-decenoate and 8-nonen-2-one were achieved. The former compd. is the Me ester of the "queen substance" of the honey **bee**, and the latter is part of an "attractant mixt." for cheese **mites** found in cheddar cheese. These syntheses were accomplished by converting com. available 6-bromo-**2-hexanone** to 6-cuprio-**2-hexanone** followed by cross-coupling with com. available Me 4-bromocrotonate and allyl bromide, resp.

AB Remote ketone-functionalized aryl- and alkylcopper reagents were synthesized by the use of a highly activated form of zero-valent copper. 5-Bromo-**2-pentanone** and 4-iodobenzophenone undergo oxidative addn. with activated copper to form 5-cuprio-**2-pentanone** and 4-cupriobenzophenone, resp. These, in turn, can be cross-coupled with alkyl halides to produce the corresponding alkylated ketones and with acid chlorides to form the corresponding diketones. By use of this methodol., a two-step, one-pot synthesis of Me (E)-9-oxo-2-decenoate and 8-nonen-2-one were achieved. The former compd. is the Me ester of the "queen substance" of the honey **bee**, and the latter is part of an "attractant mixt." for cheese **mites** found in cheddar cheese. These syntheses were accomplished by converting com. available 6-bromo-**2-hexanone** to 6-cuprio-

2-hexanone followed by cross-coupling with com.
available Me 4-bromocrotonate and allyl bromide, resp.

ST pheromone honey **bee** cheese **mite**; copper reagent prepn coupling; oxidn addn bromopentanone iodobenzophenone organocopper; halide cross coupling cupriopentanone cupriobenzophenone; oxodecenoate honey **bee** substance prepn; nonenone cheese **mite** attractant prepn; copper reaction bromohexenone; cupriohexenone coupling bromocrotonate allyl bromide

IT 1189-64-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of, as component of cheese **mite** attractant mixt.)

IT 5009-32-5P, 8-Nonen-2-one
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of, as component of honey **bee** "queen substance")

IT **591-78-6P, 2-Hexanone** 821-55-6P, 2-Nonanone
3664-60-6P, 7-Octen-2-one 14171-89-2P 16538-91-3P, 2,9-Decanedione
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of, from cupriopentanone)

IT 3884-71-7, 5-Bromo-**2-pentanone** 6136-66-9,
4-Iodobenzophenone 10226-29-6, 6-Bromo-**2-hexanone**
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with activated copper)

L7 ANSWER 39 OF 85 CABA COPYRIGHT 2004 CABI on STN
AN 95:194568 CABA
DN 19951112494
TI Control of the greater wax moth Galleria mellonella by strains of Bacillus thuringiensis in the municipality of Tecoman, Colima, Mexico
Control de la polilla mayor de la cera Galleria mellonella por cepas de Bacillus thuringiensis en el municipio de Tecoman, Colima, Mexico
AU Moran Rodriguez, C.; Sandoval y Trujillo, H.
CS CIIDIR-IPN Unidad Durango, Zaragoza, 243, Durango, Dgo., Mexico.
SO Revista Latinoamericana de Microbiologia, (1991) Vol. 33, No. 2-3, pp. 203-207. 18 ref.
ISSN: 0034-9771
DT Journal
LA Spanish
SL English
ED Entered STN: 19951115
Last Updated on STN: 19951115

AB Serotypes Bacillus thuringiensis subsp. thuringiensis H-1, B. t. subsp. aizawai H-7 and B. t. subsp. galleriae H-5a5b were cultured in B-5, Dubois and modified Faust media spore viability was determined. The spore complexes were tested against larvae and adults of Galleria mellonella and **Apis** mellifera. Recovery of the spore-crystal complex was carried out by co-precipitation with lactose and **acetone**. The best results were obtained with B. t. subsp. thuringiensis cultures in the medium B-5, giving LD100 of 75 mg/kg of diet of G. mellonella, a biomass yield of 8 g (DW) per litre of medium, and a viable count of 2.8 x 106 spores/mg of DW, and were not toxic to A. mellifera. Field applications of 3 g of spore-crystal complex sprayed inside beehives in Mexico gave protection against the **pest** for a minimum of 52 days.

AB . . . modified Faust media spore viability was determined. The spore complexes were tested against larvae and adults of Galleria mellonella and **Apis** mellifera. Recovery of the spore-crystal complex was carried out by co-precipitation with lactose and **acetone**. The best results were obtained with B. t. subsp. thuringiensis cultures in the medium B-5, giving LD100 of 75 mg/kg. . . . to A. mellifera. Field applications of 3 g of spore-crystal complex sprayed inside beehives in Mexico gave protection against the **pest** for a minimum of 52 days.

BT insects; arthropods; invertebrates; animals; Lepidoptera; Hymenoptera;

Galleria; Pyralidae; **Apis**; Apidae; Bacillus thuringiensis; Bacillus; Bacillaceae; Firmicutes; bacteria; prokaryotes; North America; America; Developing Countries; Threshold Countries; Latin America; OECD Countries

CT Insect **pests**; biological control; pathogens; insect control; culture techniques; microbial **pesticides**; **pests**; honey **bees**; control methods; toxicity

ORGN Lepidoptera; Pyralidae; Hymenoptera; Apidae; galleria mellonella; **apis** mellifera; bacillus thuringiensis subsp. thuringiensis; bacillus thuringiensis subsp. aizawai; bacillus thuringiensis subsp. galleriae; Bacillus thuringiensis

L7 ANSWER 40 OF 85 CROPU COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1991-82072 CROPU I J D S G

TI Avermectins, A Novel Class of Compounds: Implications for Use in Arthropod **Pest** Control.

AU Lasota J A; Dybas R A

CS Merck-USA

LO Three Bridges, N.J., USA

SO Annu.Rev.Entomol. (36, 91-117, 1991) 133 Ref.
CODEN: ARENAA

AV Merck Sharp & Dohme Research Laboratories, Agricultural Research and Development, Three Bridges, New Jersey, 08887, U.S.A.

DT Journal

LA English

FA AB; LA; CT

AB This paper reviews the use of avermectins in controlling arthropod **pests**. Structure and chemistry, mode of action, and spectrum of activity (e.g. nematicidal, molluscicidal and insecticidal) of the avermectins are discussed. Environmental fate and toxicity of abamectin (avermectin B1) including degradation and metabolism, soil and crop residues and aquatic toxicity are examined. Laboratory and field studies evaluating the activity and use of abamectin against Formicidae, **Acarina**, Blattidae, Psyllidae, and Lepidoptera are reported. Effects of abamectin on beneficial insects is also discussed. Resistance studies with abamectin and potential cross resistance in insects with resistance to various insecticides are also presented. MK-243 and ivermectin were mentioned.

TI Avermectins, A Novel Class of Compounds: Implications for Use in Arthropod **Pest** Control.

AB This paper reviews the use of avermectins in controlling arthropod **pests**. Structure and chemistry, mode of action, and spectrum of activity (e.g. nematicidal, molluscicidal and insecticidal) of the avermectins are discussed.. . . . crop residues and aquatic toxicity are examined. Laboratory and field studies evaluating the activity and use of abamectin against Formicidae, **Acarina**, Blattidae, Psyllidae, and Lepidoptera are reported. Effects of abamectin on beneficial insects is also discussed. Resistance studies with abamectin and. . .

ABEX. . . . Metaseiulus occidentalis, Diglyphus intermedius, Ganespidium hunteri, Chrysonotomyia, Chrysocharis, Discorygma, Aphytis melinus, Cryptolaemus montrouzieri, Euseuis stipulatus, Phidippus audax, Eisenia foetida and **Apis** mellifera. Aquatic toxicity was discussed with reference to: bluegill fish, rainbow trout, Penaeus duorarum, Daphnia, Callinectes, Ostrea edulis, mallard duck. . .

CT [01] FIELD *FT; N.J. *FT; REVIEW *FT; MAIN-TOPIC *FT; LAB.TEST *FT; INSECTICIDE *FT; NEMATICIDE *FT; MOLLUSCICIDE *FT; **ACARICIDE** *FT; ACTION-MECHANISM *FT; NEUROTOX. *FT; METABOLISM *FT; DEGRADATION *FT; RESIDUE-PERSISTENCE *FT; BIOACCUMULATION *FT; SOIL *FT; AQUATIC *FT; INTOXICATION *FT; NON-TARGET *FT; NAT.CONTROL-AGENT *FT; ENV. *FT; INSECTICIDE-RESISTANCE *FT; **ACARICIDE**-RESISTANCE *FT; CROSS-RESISTANCE *FT; DRIFT *FT; ABSENCE *FT; BAIT *FT; FOLIAR *FT; SPRAY *FT; USA *FT; AREA-AMERICA *FT; RESIDUE *FT; ACCUMULATION. . .

*FT; APPL.TECHNIQUE *FT; TR *FT; SE *FT; DM *FT; ST *FT
[02] IVOMEC *TR; IVERMECTIN *TR; AFFIRM *TR; AVID *TR; AGRI-**MEK**
*TR; AVERMECTIN-B1 *TR; AGRIMEC *TR; VERTIMEC *TR; AVERMECTIN *TR;
ZEPHYR *TR; MK-243 *TR; AFFIRM *SE; AVID *SE; AGRI-**MEK** *SE;
AVERMECTIN-B1 *SE; AGRIMEC *SE; VERTIMEC *SE; AVERMECTIN *SE; ZEPHYR
*SE; AFFIRM *ST; AVID *ST; AGRI-**MEK** *ST; AVERMECTIN-B1 *ST;
AGRIMEC *ST; VERTIMEC *ST; AVERMECTIN *ST; ZEPHYR *ST; AFFIRM *DM;
AVID *DM; AGRI-**MEK** *DM; AVERMECTIN-B1 *DM; AGRIMEC *DM;
VERTIMEC *DM; AVERMECTIN *DM; ZEPHYR *DM; REVIEW *FT; TR *FT; DM *FT;
SE *FT; ST. . . CHRYSOCHARIS *SE; DISCORYGMA *SE; APHYTIS *SE;
MELINUS *SE; CRYPTOLAEMUS *SE; MONTROUZIERI *SE; EUSEIUS *TR;
STIPULATUS *SE; PHIDIPPUS *SE; AUDAX *SE; **APIS** *SE;
MELLIFERA *SE; **BEE** *SE; DAPHNIA *SE; EISENIA *SE; FOETIDA
*SE; PENAEUS *SE; DUORARUM *SE; CALLINECTES *SE; SAPIDUS *SE; OSTREA
*SE; EDULIS *SE; REVIEW. . .
[02] IVOMEC *TR; IVERMECTIN *TR; AFFIRM *TR; AVID *TR; AGRI-**MEK**
*TR; AVERMECTIN-B1 *TR; AGRIMEC *TR; VERTIMEC *TR; AVERMECTIN *TR;
ZEPHYR *TR; MK-243 *TR; AFFIRM *SE; AVID *SE; AGRI-**MEK** *SE;
AVERMECTIN-B1 *SE; AGRIMEC *SE; VERTIMEC *SE; AVERMECTIN *SE; ZEPHYR
*SE; AFFIRM *ST; AVID *ST; AGRI-**MEK** *ST; AVERMECTIN-B1 *ST;
AGRIMEC *ST; VERTIMEC *ST; AVERMECTIN *ST; ZEPHYR *ST; AFFIRM *DM;
AVID *DM; AGRI-**MEK** *DM; AVERMECTIN-B1 *DM; AGRIMEC *DM;
VERTIMEC *DM; AVERMECTIN *DM; ZEPHYR *DM; REVIEW *FT; TR *FT; DM *FT;
SE *FT; ST. . . CHRYSOCHARIS *SE; DISCORYGMA *SE; APHYTIS *SE;
MELINUS *SE; CRYPTOLAEMUS *SE; MONTROUZIERI *SE; EUSEIUS *TR;
STIPULATUS *SE; PHIDIPPUS *SE; AUDAX *SE; **APIS** *SE;
MELLIFERA *SE; **BEE** *SE; DAPHNIA *SE; EISENIA *SE; FOETIDA
*SE; PENAEUS *SE; DUORARUM *SE; CALLINECTES *SE; SAPIDUS *SE; OSTREA
*SE; EDULIS *SE; REVIEW. . .
[05]. . . CHRYSOCHARIS *SE; DISCORYGMA *SE; APHYTIS *SE; MELINUS *SE;
CRYPTOLAEMUS *SE; MONTROUZIERI *SE; EUSEIUS *TR; STIPULATUS *SE;
PHIDIPPUS *SE; AUDAX *SE; **APIS** *SE; MELLIFERA *SE;
BEE *SE; DAPHNIA *SE; EISENIA *SE; FOETIDA *SE; PENAEUS *SE;
DUORARUM *SE; CALLINECTES *SE; SAPIDUS *SE; OSTREA *SE; EDULIS *SE;
REVIEW. . .

L7 ANSWER 41 OF 85 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1990:174103 CAPLUS
DN 112:174103
TI Synergistic varrocide aerosol containing **acetone** for
honeybee colonies
IN Vesely, Vladimir; Titera, Dalibor; Kamler, Frantisek
PA Czech.
SO Czech., 2 pp.
CODEN: CZXXA9
DT Patent
LA Czech
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CS 261124	B1	19890112	CS 1986-9452	19861217
PRAI	CS 1986-9452		19861217		

AB A synergistic compn. for protection of **honeybees** against
mites (Varroidae) comprises **acaricide** 1 and Me2CO
50-5000 parts. The compn. is used as an aerosol for **bee**
colonies.
TI Synergistic varrocide aerosol containing **acetone** for
honeybee colonies
AB A synergistic compn. for protection of **honeybees** against
mites (Varroidae) comprises **acaricide** 1 and Me2CO
50-5000 parts. The compn. is used as an aerosol for **bee**
colonies.

ST **honeybee acaricide acetone** synergism;
Varroidae **honeybee acaricide acetone** mixt
IT Varroidae
(protection of **honeybees** from, **acetone-acaricide** mixts. for)
IT **Honeybee**
(synergistic **acaricides** for, **acetone-acaricide** mixts. as, for protection from Varroidae)
IT **Acaricides**
(synergistic, mixts. with **acetone**, for protection of **honeybees** from Varroidae)
IT 126450-41-7 126450-42-8
RL: BIOL (Biological study)
(for protection of **honeybees** from Varroidae, synergistic)
IT **67-64-1D, Acetone,** mixts. with **acaricides**
RL: BIOL (Biological study)
(synergistic, for protection of **honeybees** from Varroidae)

L7 ANSWER 42 OF 85 CAPLUS
AN 1991:489530 CAPLUS
DN 115:89530
TI Olfacto-gustatory behavior of **Apis** florea F. to some carbonyl compounds
AU Gupta, Mahavir
CS Dep. Zool., Haryana Agric. Univ., Hisar, 125004, India
SO Journal of Animal Morphology and Physiology (1989), 36(2), 139-51
CODEN: JAMPA2; ISSN: 0021-8804
DT Journal
LA English
AB **Pesticides** used for plant protection are generally hazardous to **honeybees**. To protect them from **pesticidal** hazards, a search was conducted to find chems. which can serve as repellents to **Apis** florea for a duration of 6-8 h of their diurnal activity. Seven compds. were evaluated as repellents by the olfacto-gustatory method. These were evaluated at concns. ranging from 0.0625 to 5 g liter-1. The differential feeding of **bees** on sugar water and chem. sugar solns. provided an index of repellency. On the basis of max. percent repellency, Et benzyl ketone proved to be the best repellent compd.
TI Olfacto-gustatory behavior of **Apis** florea F. to some carbonyl compounds
AB **Pesticides** used for plant protection are generally hazardous to **honeybees**. To protect them from **pesticidal** hazards, a search was conducted to find chems. which can serve as repellents to **Apis** florea for a duration of 6-8 h of their diurnal activity. Seven compds. were evaluated as repellents by the olfacto-gustatory method. These were evaluated at concns. ranging from 0.0625 to 5 g liter-1. The differential feeding of **bees** on sugar water and chem. sugar solns. provided an index of repellency. On the basis of max. percent repellency, Et benzyl ketone proved to be the best repellent compd.
ST carbonyl compd repellent **honeybee; Apis** carbonyl compd repellent
IT Insect repellents
(for **honeybees**, carbonyl compds. as)
IT Behavior
(olfacto-gustatory, of **honeybee** to carbonyl compds.)
IT **Honeybee**
(A. florea, olfacto-gustatory behavior of, to carbonyl compds., repellents in relation to)
IT 105-58-8, Diethyl carbonate 123-54-6, Acetyl **acetone,**
biological studies 141-97-9, Ethyl acetoacetate 1007-32-5, Ethyl

benzyl ketone 2550-26-7, Benzyl **acetone** 6683-92-7, 1-Phenyl-
2-pentanone 25870-62-6, 1-Phenyl-**2-**
hexanone
RL: BIOL (Biological study)
(olfacto-gustatory behavior of **honeybee** to)

L7 ANSWER 43 OF 85 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1989:419430 CAPLUS
DN 111:19430
TI Olfactometric evaluation of the response of **Apis** florea to some repellent ketones
AU Gupta, Mahavir
CS Dep. Zool., Haryana Agric. Univ., Hisar, 125-004, India
SO Zoologische Jahrbuecher, Abteilung fuer Allgemeine Zoologie und Physiologie der Tiere (1989), 93(1), 97-104
CODEN: ZJZPAY; ISSN: 0044-5185
DT Journal
LA English
AB Nine ketones were tested for their **bee**-repellent power for possible use in **pesticide** formulations in split-arena repellency tests in an olfactometer at concns. of 625 .times. 10-5-5 .times. 10-1%. None of the compds. elicited 100% repellency, whereby their repellent effect directly correlated with concn. until a certain level (generally between 0.05% and 0.2%) after which effects leveled off. On the basis of this observation, compds. were classified into 3 groups with cut-off points at 0.05, 0.10, and 0.20% concns. The most repellent (lowest cut-off point) compds. were methyl-n-octyl ketone, p-methylacetophenone, 3- and 4-methylcyclohexanone, and cycloheptanone.
TI Olfactometric evaluation of the response of **Apis** florea to some repellent ketones
AB Nine ketones were tested for their **bee**-repellent power for possible use in **pesticide** formulations in split-arena repellency tests in an olfactometer at concns. of 625 .times. 10-5-5 .times. 10-1%. None of the compds. elicited 100% repellency, whereby their repellent effect directly correlated with concn. until a certain level (generally between 0.05% and 0.2%) after which effects leveled off. On the basis of this observation, compds. were classified into 3 groups with cut-off points at 0.05, 0.10, and 0.20% concns. The most repellent (lowest cut-off point) compds. were methyl-n-octyl ketone, p-methylacetophenone, 3- and 4-methylcyclohexanone, and cycloheptanone.
ST ketone **bee** repellent; **honeybee** repellent ketone
IT Ketones, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(**honeybee** olfactory repellency by)
IT **Honeybee**
(ketones as repellents for)
IT Insect repellents
(ketones as, for **honeybee**)
IT 93-55-0, Propiophenone 118-93-4, 2'-Hydroxyacetophenone 122-00-9, p-Methylacetophenone **123-19-3, 4-Heptanone**
502-42-1, Cycloheptanone 583-60-8, 2-Methylcyclohexanone 589-92-4, 4-Methylcyclohexanone 591-24-2, 3-Methylcyclohexanone 693-54-9, Methyl-n-octyl ketone
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(**honeybee** olfactory repellency by)

L7 ANSWER 44 OF 85 CABA COPYRIGHT 2004 CABI on STN
AN 91:100930 CABA
DN 19910230683
TI Effects of sublethal exposure to diazinon on longevity and temporal

division of labor in the honey **bee** (Hymenoptera: Apidae)

AU MacKenzie, K. E.; Winston, M. L.

CS Dept. Biological Sci., Center for Pest Managemnet, Simon Fraser Univ., Burnaby, BC V5A 1S6, Canada.

SO Journal of Economic Entomology, (1989) Vol. 82, No. 1, pp. 75-82. Bb. 37 ref.
ISSN: 0022-0493

DT Journal

LA English

ED Entered STN: 19941101
Last Updated on STN: 19941101

AB When worker **Apis** mellifera were exposed to sublethal **pesticide** concentrations, the majority of tests revealed no significant differences between control and treatment groups in the ages when tasks were conducted. Lifespan was the most consistently affected parameter studied, with division of labour tasks not consistently affected. Single exposures to various concentrations of diazinon reduced lifespan in 1 case and altered task performance in 3 cases - "clean", "entrance", and "forage". In experiments that exposed workers 1, 2, or 3 times to **acetone** or a dose of diazinon causing approximately 10% mortality, a number of adverse effects were seen; the majority were in the single-exposure groups. Lifespan was reduced in 2 cases, and certain temporal division of labour tasks were adversely affected, especially nectar handling and foraging. Treatment age had a significant effect on the results, with workers treated at emergence being more sensitive to **pesticide** exposure than older workers (14 of the 20 significant results reported). Stress in the form of **pesticide** exposure and handling appears to be more harmful to newly emerged **bees** than to any other age group. Lifespan and foraging measurements are potential methods for evaluating sublethal **pesticide** stress on **honeybees**.<new para>ADDITIONAL ABSTRACT:<new para>The effects of exposure to sublethal dosages of diazinon on temporal division of labour and longevity of workers of **Apis** mellifera were studied in the laboratory. The majority of tests revealved no significant differences between untreated and treated groups in the ages when tasks were conducted. Longevity was the most consistently affected category studied, with division of labour being not consistently affected. Single exposures to various concn of diazinon reduced longevity in one case and altered task performance in 3 cases. In experiments that exposed workers once, twice or 3 times to **acetone** or a dose of diazinon causing approximately 10% mortality, a number of adverse effects were seen; the majority were in the single-exposure groups. Longevity was reduced in 2 cases, and certain temporal division-of-labour tasks were adversely affected, especially nectar handling and foraging. Treatment age had a significant effect on the results, with workers treated at emergence being more sensitive to **pesticide** exposure than older workers. Stress in the form of **pesticide** exposure and handling appeared to be more harmful to newly emerged **bees** than any other group.

TI Effects of sublethal exposure to diazinon on longevity and temporal division of labor in the honey **bee** (Hymenoptera: Apidae).

AB When worker **Apis** mellifera were exposed to sublethal **pesticide** concentrations, the majority of tests revealed no significant differences between control and treatment groups in the ages when tasks were. . . performance in 3 cases - "clean", "entrance", and "forage". In experiments that exposed workers 1, 2, or 3 times to **acetone** or a dose of diazinon causing approximately 10% mortality, a number of adverse effects were seen; the majority were in. . . and foraging. Treatment age had a significant effect on the results, with workers treated at emergence being more sensitive to **pesticide** exposure than older workers (14 of the 20 significant results reported). Stress in the form of **pesticide** exposure and handling appears to be more harmful to newly emerged **bees** than to any other age

group. Lifespan and foraging measurements are potential methods for evaluating sublethal **pesticide** stress on **honeybees** .<new para>ADDITIONAL ABSTRACT:<new para>The effects of exposure to sublethal dosages of diazinon on temporal division of labour and longevity of workers of **Apis** mellifera were studied in the laboratory. The majority of tests revealved no significant differences between untreated and treated groups in. . . one case and altered task performance in 3 cases. In experiments that exposed workers once, twice or 3 times to **acetone** or a dose of diazinon causing approximately 10% mortality, a number of adverse effects were seen; the majority were in. . . and foraging. Treatment age had a significant effect on the results, with workers treated at emergence being more sensitive to **pesticide** exposure than older workers. Stress in the form of **pesticide** exposure and handling appeared to be more harmful to newly emerged **bees** than any other group.

BT Hymenoptera; insects; arthropods; invertebrates; animals; **Apis**; Apidae

CT Poisoning; honey **bees**; diazinon; worker honey **bees**; lifespan; age; effects; honey **bee** colonies; division of labour; Beneficial insects; Pollinators; Nontarget effects; insecticides; biology; agricultural entomology

ORGN Apidae; Hymenoptera; Insects; **Apis** mellifera

L7 ANSWER 45 OF 85 WPIDS

AN 1989-069186 [10] WPIDS

DNC C1989-030792

TI Agents against **Varroa** Jacobsoni **mite** in **bee** colonies - contg. coumarinyl thiono phosphate and copper chelate of ethyl aceto acetate, **acetone** or acetic acid.

DC A96 B05 C01

IN BEKKER, K H; BREMER, R; FORIGEN, F; HESSE, B; KOCHMANN, W; KORNER, H J; STAECK, D

PA (FARF) VEB CHEMIEKOMB BITTERFELD

CYC 1

PI DD 260859 A 19881012 (198910)* 7p
DD 260859 B 19900418 (199039)

ADT DD 260859 A DD 1987-304036 19870622

PRAI DD 1987-304036 19870622

AB DD 260859 A UPAB: 19930923
New agents for combatting the **mite Varroa** jacobsoni in normally developed **bee** colonies are produced by mixing (A) a coumarinyl thiophosphate of formula (I) and (B) a copper chelate of formula (III), (IV) or (V) with (C) extending agents and/or solvents, emulsifiers and/or dispersing agents by known methods, the mixture being diluted with water when used.

Pref. agents contain 0.02-0.6g component B per 2-35g component A. Pref. solvents are alcohols, glycols, ketones, polyglycols and sulphoxides. Pref. emulsifiers or dispersing agents are alkylaryl polyglycol ethers, protein hydrolysates and/or natural products. The agents are pref. administered in pollen substitutes. Generally 50g pollen substitute contg. 50-1000 mg (pref. 200 mg) component A and up to 17 mg component B are administered per colony per day for 14 days.

USE/ADVANTAGE - Highly effective, easy-to-use preparations which due to the synergism between components (A) and (B) are highly active against **Varroa** jacobsonii at concns. which are harmless to **bees**.
0/0

TI Agents against **Varroa** Jacobsoni **mite** in **bee** colonies - contg. coumarinyl thiono phosphate and copper chelate of ethyl aceto acetate, **acetone** or acetic acid.

AB DD 260859 UPAB: 19930923
New agents for combatting the **mite Varroa** jacobsoni in normally developed **bee** colonies are produced by mixing (A) a

coumarinyl thiophosphate of formula (I) and (B) a copper chelate of formula (III),. . . USE/ADVANTAGE - Highly effective, easy-to-use preparations which due to the synergism between components (A) and (B) are highly active against **Varroa** jacobsonii at concns. which are harmless to **bees**.
0/0

ABEQ DD 260859 UPAB: 19930923
New agents for combatting the **mite Varroa** jacobsoni in normally developed **bee** colonies are produced by mixing (A) a coumarinyl thiophosphate of formula (I) and (B) a copper chelate of formula (III),. . . USE/ADVANTAGE - Highly effective, easy-to-use preparations which due to the synergism between components (A) and (B) are highly active against **Varroa** jacobsonii at concns. which are harmless to **bees**.
0/0

TT TT: AGENT **VARROA MITE BEE** COLONY CONTAIN COUMARINYL THIONO PHOSPHATE COPPER CHELATE ETHYL ACETO ACETATE **ACETONE** ACETIC ACID.

L7 ANSWER 46 OF 85 CABA COPYRIGHT 2004 CABI on STN
AN 88:112350 CABA
DN 19880226147
TI The repellent effect of two pyrethroid insecticides on the honey **bee**
AU Rieth, J. P.; Levin, M. D.
CS Dept. Entomology, Univ. Arizona, Tucson, AZ, USA.
SO Physiological Entomology, (1988) Vol. 13, No. 2, pp. 213-218. Bj. 27 ref.
ISSN: 0307-6962
DT Journal
LA English
ED Entered STN: 19941101
Last Updated on STN: 19941101
AB An improved laboratory method for assessing the repellent effect of pyrethroid insecticides on insects was developed using small colonies of **honeybees** in flight cages. Conditioning to scented feeders allowed the separation of foraging **bees** from a single colony into paired treatment and control groups. Exposure to insecticides was accomplished by treating feeders with 1 ml **acetone** containing a known amount of permethrin or cypermethrin. Control feeders were treated with **acetone** only. This method primarily exposed the tarsi and the abdominal venter of the **bees** to the insecticide. **Bees** which contacted a pyrethroid returned to the colony, where they showed inactivity for periods of 1-24 h. After recovery, normal foraging resumed. No effects on memory were observed, and there appeared to be no olfactory repellent effect. It is suggested that the so-called repellent effect of pyrethroid insecticides is more accurately described as "sublethal toxicity resulting in transitory inhibition of activity". D. G. Lowe.<new para>ADDITIONAL ABSTRACT:<new para>An improved model for the repellent effect of pyrethroid insecticides on insects was developed using small colonies of **honeybees** (**Apis** mellifera) in flight cages. Conditioning to scented feeders allowed the separation of foraging **bees** from a single colony into paired treatment and control groups. The repellent response was characterized as a sublethal toxic effect resulting in transitory inhibition of activity. Permethrin and cypermethrin were shown to be contact repellents to **honeybees**; exposure was primarily to the tarsi and abdominal venter. Repellency was fully reversible within 24 h. No permanent effects on either memory function or foraging efficiency were observed following acute exposure.
TI The repellent effect of two pyrethroid insecticides on the honey **bee**.
AB An improved laboratory method for assessing the repellent effect of pyrethroid insecticides on insects was developed using small colonies of

honeybees in flight cages. Conditioning to scented feeders allowed the separation of foraging **bees** from a single colony into paired treatment and control groups. Exposure to insecticides was accomplished by treating feeders with 1 ml **acetone** containing a known amount of permethrin or cypermethrin. Control feeders were treated with **acetone** only. This method primarily exposed the tarsi and the abdominal venter of the **bees** to the insecticide. **Bees** which contacted a pyrethroid returned to the colony, where they showed inactivity for periods of 1-24 h. After recovery, normal. . . para>ADDITIONAL ABSTRACT:<new para>An improved model for the repellent effect of pyrethroid insecticides on insects was developed using small colonies of **honeybees** (**Apis** mellifera) in flight cages. Conditioning to scented feeders allowed the separation of foraging **bees** from a single colony into paired treatment and control groups. The repellent response was characterized as a sublethal toxic effect resulting in transitory inhibition of activity. Permethrin and cypermethrin were shown to be contact repellents to **honeybees**; exposure was primarily to the tarsi and abdominal venter. Repellency was fully reversible within 24 h. No permanent effects on. . .

BT **Apis**; Apidae; Hymenoptera; insects; arthropods; invertebrates; animals; botanical insecticides; insecticides; **pesticides**; pyrethroid insecticides

CT Poisoning; HONEY **BEES**; pyrethrins; Toxicity; repellency; Pollinators; Nontarget effects; Repellents; insecticides; Permethrin; Cypermethrin; Techniques; models; Pyrethroid insecticides; pollination; agricultural entomology

ORGN Hymenoptera; Apidae; **Apis** mellifera

L7 ANSWER 47 OF 85 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 8

AN 1987:137242 CAPLUS

DN 106:137242

TI Method of determining organochlorine **pesticides** in apicultural products

IN Zharov, A. V.

PA All-Union Scientific-Research Institute of Veterinary Entomology and Arachnology, USSR

SO U.S.S.R.
From: Otkrytiya, Izobret. 1987, (3), 186.
CODEN: URXXAF

DT Patent

LA Russian

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	SU 1285366	A1	19870123	SU 1984-3741877	19840507
PRAI	SU 1984-3741877		19840507		

AB Organochlorine **pesticide** residues in apiculture products are detd. by extg. the products with an org. solvent, purifying the ext. by thin-layer chromatog., desorbing the **pesticides** with a mixt. of org. solvents, and carrying out gas-chromatog. sepn. and detection of the components to be analyzed. The precision and rapidity of the detn. are increased by carrying out the extn. at 80-95.degree. with a mixt. of dimethylsulfoxide and a satd. aq. soln. of a salt with a soly. of 20-50 g/100 g H2O, in a 1.3:1 to 1:1.3 ratio. For desorption of the **pesticides** a mixt. of Me2CO and xylene in a 1:6 to 1:1/ ratio is used.

TI Method of determining organochlorine **pesticides** in apicultural products

AB Organochlorine **pesticide** residues in apiculture products are detd. by extg. the products with an org. solvent, purifying the ext. by thin-layer chromatog., desorbing the **pesticides** with a mixt. of org. solvents, and carrying out gas-chromatog. sepn. and detection of the

components to be analyzed. The precision and rapidity of the detn. are increased by carrying out the extn. at 80-95.degree. with a mixt. of dimethylsulfoxide and a satd. aq. soln. of a salt with a soly. of 20-50 g/100 g H2O, in a 1.3:1 to 1:1.3 ratio. For desorption of the **pesticides** a mixt. of Me2CO and xylene in a 1:6 to 1:1/ ratio is used.

ST **pesticide** organochlorine chromatog apiculture

IT **Pesticides**
(chlorine-contg., extn. and chromatog. detn. of, in apicultural products)

IT **Honeybee**
(organochlorine **pesticides** extn. from products of, for chromatog. detn.)

IT Honey
(organochlorine **pesticides** extn. from, for chromatog. detn.)

IT 1330-20-7, Xylene, biological studies
RL: BIOL (Biological study)
(solvent contg. **acetone** and, for organochlorine **pesticides**)

IT **67-64-1, Acetone,** biological studies
RL: BIOL (Biological study)
(solvent contg. xylene and, for organochlorine **pesticides**)

IT 67-68-5, Dimethyl sulfoxide, biological studies
RL: BIOL (Biological study)
(solvent, for organochlorine **pesticides** of apicultural products)

L7 ANSWER 48 OF 85 CABA COPYRIGHT 2004 CABI on STN
AN 88:42905 CABA
DN 19880225409
TI Impairment of a classical conditioned response of the honey **bee** (**Apis** mellifera L.) by sublethal doses of synthetic pyrethroid insecticides
AU Taylor, K. S.; Waller, G. D.; Crowder, L. A.
CS Carl Hayden Bee Res. Center, ARS, USDA, 2000 E. Allen Rd., Tucson, AZ 85719, USA.
SO Apidologie, (1987) Vol. 18, No. 3, pp. 243-252. Bj.
ISSN: 0044-8435
DT Journal
LA English
SL French; German
ED Entered STN: 19941101
Last Updated on STN: 19941101

AB A classical conditioning experiment was used to compare the odour-mediated learned responses of (A) **honeybees** previously exposed to one of 6 pyrethroid insecticides dissolved in **acetone**, and (B) **honeybees** exposed only to **acetone**. The latter **bees** gave about 60% positive responses after a single training bout, increasing to 70, 80 and 90% after 2, 3 and 4 training bouts, respectively. Training bouts 4-7 resulted in no further increase in positive responses (non-significant sequence effect). Pyrethroid-treated **bees** learned at a slower rate but continued to show an improvement in positive responses throughout the test. However, treated **bees** attained only c. 60% positive responses after their seventh training bout. Odour training responses were least affected by fluvalinate and most seriously disrupted by flucythrinate and cyfluthrin; permethrin, fenvalerate, and cypermethrin were intermediate in their effect on the conditioned response. Author.

TI Impairment of a classical conditioned response of the honey **bee** (**Apis** mellifera L.) by sublethal doses of synthetic pyrethroid insecticides.

AB A classical conditioning experiment was used to compare the odour-mediated

learned responses of (A) **honeybees** previously exposed to one of 6 pyrethroid insecticides dissolved in **acetone**, and (B) **honeybees** exposed only to **acetone**. The latter **bees** gave about 60% positive responses after a single training bout, increasing to 70, 80 and 90% after 2, 3 and 4 training bouts, respectively. Training bouts 4-7 resulted in no further increase in positive responses (non-significant sequence effect). Pyrethroid-treated **bees** learned at a slower rate but continued to show an improvement in positive responses throughout the test. However, treated **bees** attained only c. 60% positive responses after their seventh training bout. Odour training responses were least affected by fluvalinate and. . .

BT **Apis**; Apidae; Hymenoptera; insects; arthropods; invertebrates; animals; botanical insecticides; insecticides; **pesticides**

CT HONEY **BEES**; learning; Poisoning; pyrethrins

L7 ANSWER 49 OF 85 CABA COPYRIGHT 2004 CABI on STN DUPLICATE 9

AN 89:2721 CABA

DN 19890226418

TI Studies on the efficacy of coumaphos and amitraz used as systemic preparations for the control of **Varroa** jacobsoni
Badania nad przydatnos[acute]ciq kumafosu i amitrazu zastosowanych jako preparaty ukadowe do zwalczania inwazji V. jacobsoni

AU Kostecki, R.; Jedruszuk, A.

CS Zakad Badania Chorob Owadow Uzytkowych, Inst. Weterynarii, ul. Poznan[acute]ska 35, 62-020 Swarzedz, Poland.

SO Medycyna Weterynaryjna, (1987) Vol. 43, No. 4, pp. 230-233. Bc.
ISSN: 0025-8628

DT Journal

LA Polish

SL English; Russian

ED Entered STN: 19941101
Last Updated on STN: 19941101

AB Substances similar to the systemic **acaricide** coumaphos were produced in Poland. Their solutions in **acetone**, with an emulsifier, contained 40 mg/ml of the active substance. The following substances were used: VJ-11, VJ-12, VJ-36, VJ-45, VJ-52, VJ-53, VJ-55, VJ-58, VJ-60, VJ-67 and amitraz. Coumaphos (VJ-44) was also used. Investigations on therapeutic efficacy and any side-effects were performed in autumn 1986. An aliquot of 1.0 ml of the tested chemical was added to 50 ml of water and the aqueous emulsion was uniformly applied to **bees** in the **bee**-spaces. Two applications at an interval of 7 days were used. The results confirmed the efficacy of coumaphos and amitraz for the control of **Varroa**. Similar results were also noted with VJ-45, VJ-52, VJ-53 and VJ-58. These substances appeared to be practically harmless to **bees**. CENTREQUAD Author.

TI [Studies on the efficacy of coumaphos and amitraz used as systemic preparations for the control of **Varroa** jacobsoni].
Badania nad przydatnos[acute]ciq kumafosu i amitrazu zastosowanych jako preparaty ukadowe do zwalczania inwazji V. jacobsoni.

AB Substances similar to the systemic **acaricide** coumaphos were produced in Poland. Their solutions in **acetone**, with an emulsifier, contained 40 mg/ml of the active substance. The following substances were used: VJ-11, VJ-12, VJ-36, VJ-45, VJ-52,. . . ml of the tested chemical was added to 50 ml of water and the aqueous emulsion was uniformly applied to **bees** in the **bee**-spaces. Two applications at an interval of 7 days were used. The results confirmed the efficacy of coumaphos and amitraz for the control of **Varroa**. Similar results were also noted with VJ-45, VJ-52, VJ-53 and VJ-58. These substances appeared to be practically harmless to **bees**.
CENTREQUAD Author.

BT **Varroa**; Varroidae; Mesostigmata; **mites**; **Acari**
; Arachnida; arthropods; invertebrates; animals

CT **Pests**; honey **bees**; control methods; Coumaphos
ORGN **Varroa** jacobsoni

L7 ANSWER 50 OF 85 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1989:452413 CAPLUS
DN 111:52413
TI Olfactory response of **Apis** florea F. to some aryl ketones
AU Gupta, Mahavir
CS Dep. Zool., Haryana Agric. Univ., Hisar, 125004, India
SO Journal of Animal Morphology and Physiology (1987), 34(1-2), 157-62
CODEN: JAMPA2; ISSN: 0021-8804
DT Journal
LA English
AB Et benzyl ketone, benzylacetone, 1-phenyl-**2-pentanone**,
and 1-phenyl-**2-hexanone** were evaluated for repellent
potency to **honeybees** by using an olfactometer. Av. repellancy,
in decreasing potency, was Et benzyl ketone (98.5%), benzylacetone
(86.2%), 1-phenyl-**2-hexanone** (83.8%), and 1-phenyl-
2-pentanone (83.5%). Repellancy increased with
increasing dosage up to 1 g/L for benzyl **acetone** and 4 g/L for
the others. These compds. may be useful repellents in **pesticides**
toxic to **honeybees**.
TI Olfactory response of **Apis** florea F. to some aryl ketones
AB Et benzyl ketone, benzylacetone, 1-phenyl-**2-pentanone**,
and 1-phenyl-**2-hexanone** were evaluated for repellent
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2-pentanone (83.5%). Repellancy increased with
increasing dosage up to 1 g/L for benzyl **acetone** and 4 g/L for
the others. These compds. may be useful repellents in **pesticides**
toxic to **honeybees**.
ST aryl ketone olfaction **honeybee**; **Apis** aryl ketone
repellent olfaction
IT Insect repellents
(for **honeybees**, aryl ketones as)
IT Olfaction
(of aryl ketones, by **honeybee**, repellent activity in relation
to)
IT Ketones, biological studies
RL: BIOL (Biological study)
(aryl, repellent potency of, to **honeybees**)
IT **Honeybee**
(A. florea, aryl ketones repellent potency to)
IT 1007-32-5, Ethyl benzyl ketone 2550-26-7, Benzylacetone 6683-92-7,
1-Phenyl-**2-pentanone** 25870-62-6, 1-Phenyl-**2**
-hexanone
RL: BIOL (Biological study)
(repellent potency of, to **honeybees**)

L7 ANSWER 51 OF 85 CABA COPYRIGHT 2004 CABI on STN
AN 87:72544 CABA
DN 19870219917
TI The behaviour of insecticide-exposed honey **bees**
AU Cox, R. L.; Wilson, W. T.
CS Univ. Wyoming, Laramie, WY, USA.
SO American Bee Journal, (1987) Vol. 127, No. 2, pp. 118-119. Bj.
ISSN: 0002-7626
DT Journal
LA English
ED Entered STN: 19941101
Last Updated on STN: 19941101

AB The behaviour of groups of 30 or 60 young adult workers (5-10 days old) was observed after applying to each **bee** 1.0 or 10 [micro]g of a highly toxic insecticide in **acetone**. Permethrin caused the earliest abnormal reaction, but the **bees** were slow to die. Those treated with parathion were slow to show abnormal behaviour, but then died quickly. Dieldrin and carbofuran caused similar but slower responses. All treated **bees** showed one or more of the following symptoms: incoordination, lying in a supine or side position, general paralysis, no detectable movement (assumed dead). P. Walker.

TI The behaviour of insecticide-exposed honey **bees**.

AB The behaviour of groups of 30 or 60 young adult workers (5-10 days old) was observed after applying to each **bee** 1.0 or 10 [micro]g of a highly toxic insecticide in **acetone**. Permethrin caused the earliest abnormal reaction, but the **bees** were slow to die. Those treated with parathion were slow to show abnormal behaviour, but then died quickly. Dieldrin and carbofuran caused similar but slower responses. All treated **bees** showed one or more of the following symptoms: incoordination, lying in a supine or side position, general paralysis, no detectable. . .

BT **Apis**; Apidae; Hymenoptera; insects; arthropods; invertebrates; animals; **pesticides**

CT Poisoning; HONEY **BEES**; insecticides; behaviour

L7 ANSWER 52 OF 85 CROPU COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1987-83689 CROPU I S

TI Intercolony Variation in **Pesticide** Detoxification by the Honey **Bee** (Hymenoptera: Apidae).

AU Smirle M J; Winston M L

LO Burnaby, B.C., Can.

SO J.Econ.Entomol. (80, No. 1, 5-8, 1987) 2 Fig. 2 Tab. 14 Ref. CODEN: JEENAI

AV Center for Pest Management, Department of Biological Sciences, Simon Fraser University, Burnaby, British Columbia V5A 1S6 Canada.

DT Journal

LA English

FA LA; CT

AB Significant variations in polysubstrate monooxygenase activity, as measured by the in-vitro epoxidation of aldrin to dieldrin were found amongst spring, summer and fall colonies of honey **bees**. The colonies also varied in their detoxification capacity from season to season, being least able to metabolize aldrin in the spring. In further tests, worker **bees** were treated on the dorsal surface of the thorax with 1 ul technical diazinon in **acetone**. Significant regression of the LD50 of diazinon on aldrin epoxidase activity indicated the involvement of these enzymes in intercolony diazinon resistance. Studies of a number of different populations with different monooxygenase activities may throw light on metabolism of phosphorothioate insecticides.

TI Intercolony Variation in **Pesticide** Detoxification by the Honey **Bee** (Hymenoptera: Apidae).

AB. . . as measured by the in-vitro epoxidation of aldrin to dieldrin were found amongst spring, summer and fall colonies of honey **bees**. The colonies also varied in their detoxification capacity from season to season, being least able to metabolize aldrin in the spring. In further tests, worker **bees** were treated on the dorsal surface of the thorax with 1 ul technical diazinon in **acetone**. Significant regression of the LD50 of diazinon on aldrin epoxidase activity indicated the involvement of these enzymes in intercolony diazinon. . .

CT **BEE** *DM; **APIS** *DM; MELLIFERA *DM; APIDAE *DM; INTERCOLONY *FT; VARIATION *FT; DETOXICATION *FT; METABOLISM *FT; EC-1.14.14.1 *FT; ALDRIN-EPOXIDASE *FT; ACT. *FT; FLAVOPROTEIN-LINKED-MONOOXYGENASE. . .

[03] DIAZINON *DM; LD50 *FT; INSECTICIDE-RESISTANCE *FT; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DIAZINON *RN; DM *FT

L7 ANSWER 53 OF 85 CROPU
AN 1986-85075 CROPU A S I
TI Determination of Carbaryl in **Honeybees** and Pollen by High-Performance Liquid Chromatography.
AU Spittler T D; Marafioti R A; Helfman G W; Morse R A
LO Geneva, N.Y., USA
SO J.Chromatogr. (352, 439-43, 1986) 3 Fig. 17 Ref. (Z89/ARB)
CODEN: JOCRAM
AV Pesticide Residue Laboratories, Department of Food Science and Technology, New York State Agricultural Experiment Station, Cornell University, Geneva, NY 14456, U.S.A.
DT Journal
LA English
FA AB; LA; CT; MPC
AB The HPLC determination of carbaryl (CAR) in **honeybee** and pollen samples was reported. 200 Dead **bee** and pollen samples (where available) were obtained from areas of reported **bee** kills and areas surveyed for recent **pesticide** applications. Organic solvent extracts of samples were examined by GLC for parathion-methyl (PM) fenvalerate (FEN) and Guthion (GUT) (pollen only). The aqueous sample portion was further purified and taken into MeOH (for HPLC analysis of CAR) or **acetone** (for GLC analysis of GUT in **bees**). 50.70 Samples contained PM (over 0.1 ppm) and 15 samples contained CAR (over 0.1 ppm), whilst 5 contained both. None of the 8 suspect FEN samples contained FEN. Multiple LD residues were often noted. Samples spiked with PM, FEN and GUT showed 86-106% recoveries for GLC analysis.
TI Determination of Carbaryl in **Honeybees** and Pollen by High-Performance Liquid Chromatography.
AB The HPLC determination of carbaryl (CAR) in **honeybee** and pollen samples was reported. 200 Dead **bee** and pollen samples (where available) were obtained from areas of reported **bee** kills and areas surveyed for recent **pesticide** applications. Organic solvent extracts of samples were examined by GLC for parathion-methyl (PM) fenvalerate (FEN) and Guthion (GUT) (pollen only). The aqueous sample portion was further purified and taken into MeOH (for HPLC analysis of CAR) or **acetone** (for GLC analysis of GUT in **bees**). 50.70 Samples contained PM (over 0.1 ppm) and 15 samples contained CAR (over 0.1 ppm), whilst 5 contained both. None. . .
CT MELLIFERA *DM; **APIS** *DM; APIDAE *DM; HYMENOPTERA *DM; **BEE** *DM; ANALYSIS *FT; SPIKED *FT; RECOVERY *FT; RESIDUE *FT; QUANT. *FT; DET. *FT; POLLEN *FT; MULTIPLICATION *FT
[02] PARATHION-METHYL *DM; PARATHION-METHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PARATHIM *RN; DM *FT; OC *FT
[03] FENVALERATE *DM; FENVALERATE *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; FENVALERA *RN; DM *FT; OC *FT
[04] AZINPHOS-METHYL *DM; AZINPHOS-METHYL *OC; GUTHION *DM; GUTHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; AZINPHOSM *RN; DM *FT; OC *FT
[03] FENVALERATE *DM; FENVALERATE *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; FENVALERA *RN; DM *FT; OC *FT
[04] AZINPHOS-METHYL *DM; AZINPHOS-METHYL *OC; GUTHION *DM; GUTHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; AZINPHOSM *RN; DM *FT; OC *FT
[04] AZINPHOS-METHYL *DM; AZINPHOS-METHYL *OC; GUTHION *DM; GUTHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT;

ORGANOPHOSPHORUS *FT; AZINPHOSM *RN; DM *FT; OC *FT

L7 ANSWER 54 OF 85 CABA COPYRIGHT 2004 CABI on STN
AN 87:446 CABA
DN 19870218853
TI Repelling **honeybees** from insecticide-treated flowers with
2-heptanone
AU Rieth, J. P.; Wilson, W. T.; Levin, M. D.
CS Honey Bee Pesticides/Diseases Res., USDA-ARS, Laramie, WY 82071, USA.
SO Journal of Apicultural Research, (1986) Vol. 25, No. 2, pp. 78-84. B.
ISSN: 0021-8839
DT Journal
LA English
ED Entered STN: 19941101
Last Updated on STN: 19941101
AB The **honeybee** (**Apis** mellifera) pheromone **2-**
heptanone was evaluated for possible use as a repellent in
conjunction with agricultural insecticides. An efficacious repellent would
prevent or reduce **honeybee** mortality by lowering the incidence
of contact between **bees** and toxic chemicals. It was shown that
although **2-heptanone** repels **bees**, its use as
a repellent would probably not be practical in an agricultural setting,
and that under some conditions it acted as an attractant. Author.
TI Repelling **honeybees** from insecticide-treated flowers with
2-heptanone.
AB The **honeybee** (**Apis** mellifera) pheromone **2-**
heptanone was evaluated for possible use as a repellent in
conjunction with agricultural insecticides. An efficacious repellent would
prevent or reduce **honeybee** mortality by lowering the incidence
of contact between **bees** and toxic chemicals. It was shown that
although **2-heptanone** repels **bees**, its use as
a repellent would probably not be practical in an agricultural setting,
and that under some conditions it. . .
BT **Apis**; Apidae; Hymenoptera; insects; arthropods; invertebrates;
animals; **pesticides**
CT Poisoning; HONEY **BEES**; insecticides; repellents; **2-**
Heptanone
RN **110-43-0**

L7 ANSWER 55 OF 85 CABA COPYRIGHT 2004 CABI on STN DUPLICATE 10
AN 88:9881 CABA
DN 19880225144
TI Comparative toxicities of four topically applied insecticides to
Africanized and European honey **bees** (Hymenoptera: Apidae)
AU Danka, R. G.; Rinderer, T. E.; Hellmich, R. L., II; Collins, A. M.
CS Honey Bee Breeding, Genetics & Physiology Res., ARS, USDA, 1157 Ben Hur
Rd., Baton Rouge, LA 70820, USA.
SO Journal of Economic Entomology, (1986) Vol. 79, No. 1, pp. 18-21. Bb. 35
ref.
ISSN: 0022-0493
DT Journal
LA English
ED Entered STN: 19941101
Last Updated on STN: 19941101
AB Contact toxicities were established for **acetone** formulations of
azinphos-methyl, methyl-parathion, and permethrin applied to Africanized
and European worker **honeybees** in Sarara, Venezuela. For each
insecticide, 95% fiducial limits at the LC50 levels for the two types of
bee did not overlap. Africanized **bees** showed greater
tolerance to all the chemicals except carbaryl; differences in tolerance
to each of the 4 chemicals were all about 2-fold. The order of toxicity of
the compounds on the Africanized **bees** was permethrin > carbaryl

> azinphos-methyl > methyl-parathion; on the European **honeybees**, the order of toxicity was permethrin > azinphos-methyl > carbaryl > methyl-parathion. Significant differences between the types of **bee** were noted in the slopes of the probit regressions estimated for 3 of the compounds. The Africanized **bees** responded more homogeneously than the European **bees** to azinphos-methyl; European **bees** reacted more homogeneously than Africanized **bees** to carbaryl and permethrin. Author.<new para>ADDITIONAL ABSTRACT:<new para>Contact toxicities were established for **acetone** formulations of azinphos-methyl, carbaryl, methyl parathion [parathion-methyl] and permethrin applied to workers of Africanized and European types of **Apis** mellifera. For each insecticide, 95% fiducial limits at the LC50s for the 2 **bee** types did not overlap. Africanized **bees** showed greater tolerance to all compounds except carbaryl; the differences in tolerance to each of the 4 compounds were all about 2-fold. The order of toxicity of the insecticides on Africanized **bees** was permethrin > carbaryl > azinphos-methyl > parathion-methyl; on the European **bees** it was permethrin > azinphos-methyl > carbaryl > parathion-methyl. Significant differences in the **bee** types were noted in the slopes of the probit regressions estimated for 3 of the compounds. The Africanized **bees** responded more homogeneously than the European **bees** to azinphos-methyl, whereas the opposite was true for carbaryl and permethrin.

TI Comparative toxicities of four topically applied insecticides to Africanized and European honey **bees** (Hymenoptera: Apidae).

AB Contact toxicities were established for **acetone** formulations of azinphos-methyl, methyl-parathion, and permethrin applied to Africanized and European worker **honeybees** in Sarara, Venezuela. For each insecticide, 95% fiducial limits at the LC50 levels for the two types of **bee** did not overlap. Africanized **bees** showed greater tolerance to all the chemicals except carbaryl; differences in tolerance to each of the 4 chemicals were all about 2-fold. The order of toxicity of the compounds on the Africanized **bees** was permethrin > carbaryl > azinphos-methyl > methyl-parathion; on the European **honeybees**, the order of toxicity was permethrin > azinphos-methyl > carbaryl > methyl-parathion. Significant differences between the types of **bee** were noted in the slopes of the probit regressions estimated for 3 of the compounds. The Africanized **bees** responded more homogeneously than the European **bees** to azinphos-methyl; European **bees** reacted more homogeneously than Africanized **bees** to carbaryl and permethrin. Author.<new para>ADDITIONAL ABSTRACT:<new para>Contact toxicities were established for **acetone** formulations of azinphos-methyl, carbaryl, methyl parathion [parathion-methyl] and permethrin applied to workers of Africanized and European types of **Apis** mellifera. For each insecticide, 95% fiducial limits at the LC50s for the 2 **bee** types did not overlap. Africanized **bees** showed greater tolerance to all compounds except carbaryl; the differences in tolerance to each of the 4 compounds were all about 2-fold. The order of toxicity of the insecticides on Africanized **bees** was permethrin > carbaryl > azinphos-methyl > parathion-methyl; on the European **bees** it was permethrin > azinphos-methyl > carbaryl > parathion-methyl. Significant differences in the **bee** types were noted in the slopes of the probit regressions estimated for 3 of the compounds. The Africanized **bees** responded more homogeneously than the European **bees** to azinphos-methyl, whereas the opposite was true for carbaryl and permethrin.

BT **Apis**; Apidae; Hymenoptera; insects; arthropods; invertebrates; animals; organothiophosphate insecticides; organophosphorus insecticides; insecticides; **pesticides**; carbamate insecticides; carbamate **pesticides**; pyrethroid insecticides; South America; America

CT Poisoning; HONEY **BEES**; azinphos-methyl; carbaryl; parathion; permethrin; Toxicity; races; tropics; Nontarget effects; insecticides;

Parathion-methyl; **pesticides**; agricultural entomology
ORGN **Apis** mellifera

L7 ANSWER 56 OF 85 CROPU COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1986-82032 CROPU I Q S G
TI Relative Intrinsic Toxicity of Seven Insecticides to Foragers of the Indian Hive **Bee, Apis** cerana indica F.
AU Lingappa S; Jagadish A; Shivaramu K; Prabhuswamy H P
LO Bangalore, India
SO Insect Sci.Its Appl. (6, No. 5, 567-68, 1985) 1 Tab. 12 Ref. (AL)
CODEN: ISIADL
AV Department of Entomology, University of Agricultural Sciences, Bangalore-560 024, India.
DT Journal
LA English
FA AB; LA; CT
AB Intrinsic toxicity (topical) of Thiodan (endosulfan) 35% EC, Nexion (bromophos) 35% EC, Sumicidin (fenvalerate) 20% EC, fenvalerate (technical), Nexagon (bromophos-ethyl) 35% EC, malathion (technical), malathion (pure), Ekalux (quinalphos) 25% EC and Decis (deltamethrin) 2.8% EC to Indian hive **bees** (**Apis** cerona indica) was determined. Nexion was the least toxic (LD50 0.603 ug/**bee**) and Decis the most toxic (LD50 0.021 ug/**bee**).
TI Relative Intrinsic Toxicity of Seven Insecticides to Foragers of the Indian Hive **Bee, Apis** cerana indica F.
AB. . . Nexagon (bromophos-ethyl) 35% EC, malathion (technical), malathion (pure), Ekalux (quinalphos) 25% EC and Decis (deltamethrin) 2.8% EC to Indian hive **bees** (**Apis** cerona indica) was determined. Nexion was the least toxic (LD50 0.603 ug/**bee**) and Decis the most toxic (LD50 0.021 ug/**bee**).
ABEX Insecticides were applied to the abdominal sternum of each **bee**, dissolved in **acetone**, and % mortality over 24 hrs was recorded. LD50s determined (ug/**bee**) were: Thiodan (0.513), Nexion (0.603), Sumicidin (0.140), technical fenvalerate (0.213), Nexagon (0.098), technical malathion (0.084), pure malathion (0.072), Ekalux (0.072). . . .
CT **BEE** *SE; **APIS** *SE; CERONA *SE; INDICA *SE; APIDAE *SE; HYMENOPTERA *SE; **ACETONE** *RC; TOPICAL *FT; LD50 *FT; LAB.TEST *FT; APPL.TECHNIQUE *FT
[03] FENVALERATE *SE; SUMICIDIN *SE; EMULSION *FT; TECHNICAL *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; FENVALERA *RN; SE *FT
[04] BROMOPHOS-ETHYL *SE; NEXAGAN *SE; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; BROMOPHET *RN; SE *FT
[05] MALATHION *SE; TECHNICAL *FT; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; MALATHION *RN; SE *FT
[06] QUINALPHOS *SE; EKALUX *SE; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; QUINALPHO *RN; SE *FT
[07] DELTAMETHRIN *SE; DECIS *SE; EMULSION *FT;. . .
[04] BROMOPHOS-ETHYL *SE; NEXAGAN *SE; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; BROMOPHET *RN; SE *FT
[05] MALATHION *SE; TECHNICAL *FT; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; MALATHION *RN; SE *FT
[06] QUINALPHOS *SE; EKALUX *SE; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT;

QUINALPHO *RN; SE *FT
[07] DELTAMETHRIN *SE; DECIS *SE; EMULSION *FT;. . .
[05] MALATHION *SE; TECHNICAL *FT; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; MALATHION *RN; SE *FT
[06] QUINALPHOS *SE; EKALUX *SE; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; QUINALPHO *RN; SE *FT
[07] DELTAMETHRIN *SE; DECIS *SE; EMULSION *FT;. . .
[06] QUINALPHOS *SE; EKALUX *SE; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; QUINALPHO *RN; SE *FT
[07] DELTAMETHRIN *SE; DECIS *SE; EMULSION *FT;. . .

L7 ANSWER 57 OF 85 CABA COPYRIGHT 2004 CABI on STN
AN 86:19109 CABA
DN 19860217805
TI Determination of residues of some insecticides in clover flowers: a bioassay method using **honeybee** adults
AU Mansour, S. A.; Al-Jalili, M. K.
CS Plant Protection Res. Div., Min. Agric., Abu-Ghraib, Baghdad, Iraq.
SO Journal of Apicultural Research, (1985) Vol. 24, No. 3, pp. 195-198. B. ISSN: 0021-8839
DT Journal
LA English
ED Entered STN: 19941101
Last Updated on STN: 19941101
AB Residues of 6 insecticides sprayed on clover (Trifolium alexandrinum) were determined biologically using adult **honeybees** as test insects. Flower samples were extracted with **acetone** and extracts wee applied topically to **bees** without need to remove co-extractives (i.e. without clean-up). Mortalities were recorded 24 h after application and the results were used to establish dosage-mortality relationships for each insecticide. The LD50 values ([micro]g/**bee**) were 0.066, 0.068, 0.112, 0.115, 0.212 and 0.310 for pirimiphos-methyl, methomyl, propoxur, chlorpyrifos, carbaryl and fenitrothion respectively. Recoveries of the tested insecticides from flower samples that had had known amounts of insecticides added to them ranged from 80 to 110%. Residues (expressed as ppm) in clover flowers 2, 4, 7 and 10 days after application are presented; methomyl was the most persistent compound, chlorpyrifos the least. Author.
TI Determination of residues of some insecticides in clover flowers: a bioassay method using **honeybee** adults.
AB Residues of 6 insecticides sprayed on clover (Trifolium alexandrinum) were determined biologically using adult **honeybees** as test insects. Flower samples were extracted with **acetone** and extracts wee applied topically to **bees** without need to remove co-extractives (i.e. without clean-up). Mortalities were recorded 24 h after application and the results were used to establish dosage-mortality relationships for each insecticide. The LD50 values ([micro]g/**bee**) were 0.066, 0.068, 0.112, 0.115, 0.212 and 0.310 for pirimiphos-methyl, methomyl, propoxur, chlorpyrifos, carbaryl and fenitrothion respectively. Recoveries of the. . .
BT **Apis**; Apidae; Hymenoptera; insects; arthropods; invertebrates; animals; **pesticides**; Trifolium; Fabaceae; Fabales; dicotyledons; angiosperms; Spermatophyta; plants
CT HONEY **BEES**; hive products; bioassays; insecticide residues; Toxicity; insecticides

L7 ANSWER 58 OF 85 CROPU COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1985-85223 CROPU A
TI Multi-Method for the Determination of **Pesticide** Residues in Perished Honey **Bees**. I. Chlorine and Phosphorus Insecticides. (Multimethode Zur Bestimmung Von Pflanzenschutzmittelrueckstaenden In Verendeten Honigbienen. I. Chlor- Und Phosphorinsecticide.)
AU Ebing W
LO Berlin, Ger.
SO Fresenius Z.Anal.Chem. (321, No. 1, 45-48, 1985) 1 Fig. 2 Tab. 9 Ref
CODEN: ZACFAU
AV Fachgruppe fuer Pflanzenschutzmittelforschung, Abteilung fuer Oekologische Chemie, Biologische Bundesanstalt fuer Land- und Forstwirtschaft, D-1000 Berlin 33, West Germany.
DT Journal
LA German
FA AB; LA; CT; MPC
AB A multiple residue analysis method was developed for chlorine- and phosphorus-containing insecticides in dead honey **bees** (**Apis** mellifera). Extracts underwent column chromatography prior to GLC. The method was tested for:- azinphos-ethyl, azinphos-methyl, bromophos, bromophos-ethyl, chlorfenvinphos, chlormephos, chlorpyriphos, chlorthiophos, demeton-S-methyl, diazinon, dichlorvos, dimethoate, dioxathion, alpha- and beta-endosulfan, etrimphos, fonofos, gamma-HCH (lindane), heptenophos, malathion, methidathion, methoxychlor, mevinphos, parathion, parathion-methyl, phosalone, phosmet, pirimiphos-methyl, tetrachlorvinphos.
TI Multi-Method for the Determination of **Pesticide** Residues in Perished Honey **Bees**. I. Chlorine and Phosphorus Insecticides. (Multimethode Zur Bestimmung Von Pflanzenschutzmittelrueckstaenden In Verendeten Honigbienen. I. Chlor- Und Phosphorinsecticide.)
AB A multiple residue analysis method was developed for chlorine- and phosphorus-containing insecticides in dead honey **bees** (**Apis** mellifera). Extracts underwent column chromatography prior to GLC. The method was tested for:- azinphos-ethyl, azinphos-methyl, bromophos, bromophos-ethyl, chlorfenvinphos, chlormephos, chlorpyriphos,. . .
ABEX Cut and mixed specimen samples were homogenized in **acetone**. Mixtures were filtered, concentrated and treated with dichloromethane. Extracts were purified on a column of Kieselgel, active charcoal. GLC Utilized. . .
CT **APIS** *OC; MELLIFERA *OC; APIDAE *OC; HYMENOPTERA *OC; **BEE** *OC; MULTIRESIDUE *FT; DET. *FT; EXTRACTION *FT; COLUMN *FT; CHROMATOGRAPHY *FT; GLC *FT; ANALYSIS *FT; CHROMATOGRAPHY *FT
[01] AZINPHOS-ETHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; AZINPHOSE *RN; OC *FT
[02] AZINPHOS-METHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; AZINPHOSM *RN; OC *FT
[03] BROMOPHOS *OC; INSECTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; BROMOPHOS *RN; OC *FT
[04] BROMOPHOS-ETHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; BROMOPHET *RN; OC *FT
[05] CHLORFENVINPHOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; CHLORFENV *RN; OC *FT
[06] CHLORMEPHOS *OC; INSECTICIDES *FT; CONTACTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; CHLORMEPH *RN; OC *FT
[07] CHLORPYRIFOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; CHLORPYRI *RN; OC *FT
[08] CHLORTHIOPHOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; CLTHIOPHO *RN; OC *FT
[09] DEMETON-S-METHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT;

SYSTEMICS *FT; CONTACTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DEMETONSM *RN; OC *FT

[10] DIAZINON *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DIAZINON *RN; OC *FT

[11] DICHLORVOS *OC; INSECTICIDES *FT; FUMIGANTS *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DICHLORVO *RN; OC *FT

[12] DIMETHOATE *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DIMETHOAT *RN; OC *FT

[13] DIOXATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DIOXATHIO *RN; OC *FT

[14] ENDOSULFAN-ALPHA *OC; ENDOSULAL *RN; INSECTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT;. . . *OC; INSECTICIDES *FT; RODENTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT; FUMIGANTS *FT; GAMMAHCH *RN; OC *FT

[19] HEPTENOPHOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; HEPTENOPH *RN; OC *FT

[20] MALATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; MALATHION *RN; OC *FT

[21] METHIDATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; METHIDATH *RN; OC *FT

[22] METHOXYCHLOR *OC; INSECTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT; METHOXYCL *RN; OC *FT

[23] MEVINPHOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; MEVINPHOS *RN; OC *FT

[24] PARATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PARATHION *RN; OC *FT

[25] PARATHION-METHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PARATHIM *RN; OC *FT

[26] PHOSALONE *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PHOSALONE *RN; OC *FT

[27] PHOSMET *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PHOSMET *RN; OC *FT

[28] PIRIMIPHOS-METHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; FUMIGANTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PIRIMIPHM *RN; OC *FT

[29] TETRACHLORVINPHOS *OC; INSECTICIDES *FT; ANTICHOLINESTERASES *FT;. . .

[02] AZINPHOS-METHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; AZINPHOSM *RN; OC *FT

[03] BROMOPHOS *OC; INSECTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; BROMOPHOS *RN; OC *FT

[04] BROMOPHOS-ETHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; BROMOPHET *RN; OC *FT

[05] CHLORFENVINPHOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; CHLORFENV *RN; OC *FT

[06] CHLORMEPHOS *OC; INSECTICIDES *FT; CONTACTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; CHLORMEPH *RN; OC *FT

[07] CHLORPYRIFOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; CHLORPYRI *RN; OC *FT

[08] CHLORTHIOPHOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; CLTHIOPHO *RN; OC *FT

[09] DEMETON-S-METHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT; SYSTEMICS *FT; CONTACTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DEMETONSM *RN; OC *FT

[10] DIAZINON *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DIAZINON *RN; OC *FT

[11] DICHLORVOS *OC; INSECTICIDES *FT; FUMIGANTS *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DICHLORVO *RN; OC *FT

[12] DIMETHOATE *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DIMETHOAT *RN; OC *FT

[13] DIOXATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DIOXATHIO *RN; OC *FT

[14] ENDOSULFAN-ALPHA *OC; ENDOSULAL *RN; INSECTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT;. . . *OC; INSECTICIDES *FT; RODENTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT; FUMIGANTS *FT; GAMMAHCH *RN; OC *FT

[19] HEPTENOPHOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; HEPTENOPH *RN; OC *FT

[20] MALATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; MALATHION *RN; OC *FT

[21] METHIDATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; METHIDATH *RN; OC *FT

[22] METHOXYCHLOR *OC; INSECTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT; METHOXYCL *RN; OC *FT

[23] MEVINPHOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; MEVINPHOS *RN; OC *FT

[24] PARATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PARATHION *RN; OC *FT

[25] PARATHION-METHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PARATHIM *RN; OC *FT

[26] PHOSALONE *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PHOSALONE *RN; OC *FT

[27] PHOSMET *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PHOSMET *RN; OC *FT

[28] PIRIMIPHOS-METHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; FUMIGANTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PIRIMIPHM *RN; OC *FT

[29] TETRACHLORVINPHOS *OC; INSECTICIDES *FT; ANTICHOLINESTERASES *FT;. . .

[04] BROMOPHOS-ETHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; BROMOPHET *RN; OC *FT

[05] CHLORFENVINPHOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; CHLORFENV *RN; OC *FT

[06] CHLORMEPHOS *OC; INSECTICIDES *FT; CONTACTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; CHLORMEPH *RN; OC *FT

[07] CHLORPYRIFOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; CHLORPYRI *RN; OC *FT

[08] CHLORTHIOPHOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; CLTHIOPHO *RN; OC *FT

[09] DEMETON-S-METHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT; SYSTEMICS *FT; CONTACTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DEMETONSM *RN; OC *FT

[10] DIAZINON *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DIAZINON *RN; OC *FT

[11] DICHLORVOS *OC; INSECTICIDES *FT; FUMIGANTS *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DICHLORVO *RN; OC *FT

[12] DIMETHOATE *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS

*FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DIMETHOAT *RN; OC *FT

[13] DIOXATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DIOXATHIO *RN; OC *FT

[14] ENDOSULFAN-ALPHA *OC; ENDOSULAL *RN; INSECTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT;. . . *OC; INSECTICIDES *FT; RODENTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT; FUMIGANTS *FT; GAMMAHCH *RN; OC *FT

[19] HEPTENOPHOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; HEPTENOPH *RN; OC *FT

[20] MALATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; MALATHION *RN; OC *FT

[21] METHIDATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; METHIDATH *RN; OC *FT

[22] METHOXYCHLOR *OC; INSECTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT; METHOXYCL *RN; OC *FT

[23] MEVINPHOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; MEVINPHOS *RN; OC *FT

[24] PARATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PARATHION *RN; OC *FT

[25] PARATHION-METHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PARATHIM *RN; OC *FT

[26] PHOSALONE *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PHOSALONE *RN; OC *FT

[27] PHOSMET *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PHOSMET *RN; OC *FT

[28] PIRIMIPHOS-METHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; FUMIGANTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PIRIMIPHM *RN; OC *FT

[29] TETRACHLORVINPHOS *OC; INSECTICIDES *FT; ANTICHOLINESTERASES *FT;. . .

[05] CHLORFENVINPHOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; CHLORFENV *RN; OC *FT

[06] CHLORMEPHOS *OC; INSECTICIDES *FT; CONTACTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; CHLORMEPH *RN; OC *FT

[07] CHLORPYRIFOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; CHLORPYRI *RN; OC *FT

[08] CHLORTHIOPHOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; CLTHIOPHO *RN; OC *FT

[09] DEMETON-S-METHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT; SYSTEMICS *FT; CONTACTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DEMETONSM *RN; OC *FT

[10] DIAZINON *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DIAZINON *RN; OC *FT

[11] DICHLORVOS *OC; INSECTICIDES *FT; FUMIGANTS *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DICHLORVO *RN; OC *FT

[12] DIMETHOATE *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DIMETHOAT *RN; OC *FT

[13] DIOXATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DIOXATHIO *RN; OC *FT

[14] ENDOSULFAN-ALPHA *OC; ENDOSULAL *RN; INSECTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT;. . . *OC; INSECTICIDES *FT; RODENTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT; FUMIGANTS *FT; GAMMAHCH *RN; OC *FT

[19] HEPTENOPHOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT;

HEPTENOPH *RN; OC *FT
[20] MALATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT;
ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; MALATHION *RN; OC *FT
[21] METHIDATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT;
ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; METHIDATH *RN; OC *FT
[22] METHOXYCHLOR *OC; INSECTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT;
METHOXYCL *RN; OC *FT
[23] MEVINPHOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS
*FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT;
MEVINPHOS *RN; OC *FT
[24] PARATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS
*FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS
*FT; PARATHION *RN; OC *FT
[25] PARATHION-METHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT;
CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT;
ORGANOPHOSPHORUS *FT; PARATHIM *RN; OC *FT
[26] PHOSALONE *OC; INSECTICIDES *FT; **ACARICIDES** *FT;
ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PHOSALONE *RN; OC *FT
[27] PHOSMET *OC; INSECTICIDES *FT; **ACARICIDES** *FT;
ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PHOSMET *RN; OC *FT
[28] PIRIMIPHOS-METHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT;
CONTACTS *FT; FUMIGANTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS
*FT; PIRIMIPHM *RN; OC *FT
[29] TETRACHLORVINPHOS *OC; INSECTICIDES *FT; ANTICHOLINESTERASES *FT;. .
.
[07] CHLORPYRIFOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS
*FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS
*FT; CHLORPYRI *RN; OC *FT
[08] CHLORTHIOPHOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT;
CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT;
ORGANOPHOSPHORUS *FT; CLTHIOPHO *RN; OC *FT
[09] DEMETON-S-METHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT;
SYSTEMICS *FT; CONTACTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS
*FT; DEMETONSM *RN; OC *FT
[10] DIAZINON *OC; INSECTICIDES *FT; **ACARICIDES** *FT;
ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DIAZINON *RN; OC *FT
[11] DICHLORVOS *OC; INSECTICIDES *FT; FUMIGANTS *FT; CONTACTS *FT;
STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT;
DICHLORVO *RN; OC *FT
[12] DIMETHOATE *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS
*FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT;
DIMETHOAT *RN; OC *FT
[13] DIOXATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT;
ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DIOXATHIO *RN; OC *FT
[14] ENDOSULFAN-ALPHA *OC; ENDOSULAL *RN; INSECTICIDES *FT; CONTACTS *FT;
STOMACH-POISONS *FT;. . . *OC; INSECTICIDES *FT; RODENTICIDES *FT;
CONTACTS *FT; STOMACH-POISONS *FT; FUMIGANTS *FT; GAMMAHCH *RN; OC *FT
[19] HEPTENOPHOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS
*FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT;
HEPTENOPH *RN; OC *FT
[20] MALATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT;
ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; MALATHION *RN; OC *FT
[21] METHIDATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT;
ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; METHIDATH *RN; OC *FT
[22] METHOXYCHLOR *OC; INSECTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT;
METHOXYCL *RN; OC *FT
[23] MEVINPHOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS
*FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT;
MEVINPHOS *RN; OC *FT
[24] PARATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS
*FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS
*FT; PARATHION *RN; OC *FT

[25] PARATHION-METHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT;
CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT;
ORGANOPHOSPHORUS *FT; PARATHIM *RN; OC *FT
[26] PHOSALONE *OC; INSECTICIDES *FT; **ACARICIDES** *FT;
ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PHOSALONE *RN; OC *FT
[27] PHOSMET *OC; INSECTICIDES *FT; **ACARICIDES** *FT;
ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PHOSMET *RN; OC *FT
[28] PIRIMIPHOS-METHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT;
CONTACTS *FT; FUMIGANTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS
*FT; PIRIMIPHM *RN; OC *FT
[29] TETRACHLORVINPHOS *OC; INSECTICIDES *FT; ANTICHOLINESTERASES *FT;. .
.
[08] CHLORTHIOPHOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT;
CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT;
ORGANOPHOSPHORUS *FT; CLTHIOPHO *RN; OC *FT
[09] DEMETON-S-METHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT;
SYSTEMICS *FT; CONTACTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS
*FT; DEMETONSM *RN; OC *FT
[10] DIAZINON *OC; INSECTICIDES *FT; **ACARICIDES** *FT;
ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DIAZINON *RN; OC *FT
[11] DICHLORVOS *OC; INSECTICIDES *FT; FUMIGANTS *FT; CONTACTS *FT;
STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT;
DICHLORVO *RN; OC *FT
[12] DIMETHOATE *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS
*FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT;
DIMETHOAT *RN; OC *FT
[13] DIOXATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT;
ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DIOXATHIO *RN; OC *FT
[14] ENDOSULFAN-ALPHA *OC; ENDOSULAL *RN; INSECTICIDES *FT; CONTACTS *FT;
STOMACH-POISONS *FT;. . . *OC; INSECTICIDES *FT; RODENTICIDES *FT;
CONTACTS *FT; STOMACH-POISONS *FT; FUMIGANTS *FT; GAMMAHCH *RN; OC *FT
[19] HEPTENOPHOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS
*FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT;
HEPTENOPH *RN; OC *FT
[20] MALATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT;
ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; MALATHION *RN; OC *FT
[21] METHIDATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT;
ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; METHIDATH *RN; OC *FT
[22] METHOXYCHLOR *OC; INSECTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT;
METHOXYCL *RN; OC *FT
[23] MEVINPHOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS
*FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT;
MEVINPHOS *RN; OC *FT
[24] PARATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS
*FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS
*FT; PARATHION *RN; OC *FT
[25] PARATHION-METHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT;
CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT;
ORGANOPHOSPHORUS *FT; PARATHIM *RN; OC *FT
[26] PHOSALONE *OC; INSECTICIDES *FT; **ACARICIDES** *FT;
ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PHOSALONE *RN; OC *FT
[27] PHOSMET *OC; INSECTICIDES *FT; **ACARICIDES** *FT;
ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PHOSMET *RN; OC *FT
[28] PIRIMIPHOS-METHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT;
CONTACTS *FT; FUMIGANTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS
*FT; PIRIMIPHM *RN; OC *FT
[29] TETRACHLORVINPHOS *OC; INSECTICIDES *FT; ANTICHOLINESTERASES *FT;. .
.
[09] DEMETON-S-METHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT;
SYSTEMICS *FT; CONTACTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS
*FT; DEMETONSM *RN; OC *FT
[10] DIAZINON *OC; INSECTICIDES *FT; **ACARICIDES** *FT;

ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DIAZINON *RN; OC *FT
[11] DICHLORVOS *OC; INSECTICIDES *FT; FUMIGANTS *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DICHLORVO *RN; OC *FT
[12] DIMETHOATE *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DIMETHOAT *RN; OC *FT
[13] DIOXATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DIOXATHIO *RN; OC *FT
[14] ENDOSULFAN-ALPHA *OC; ENDOSULAL *RN; INSECTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT;. . . *OC; INSECTICIDES *FT; RODENTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT; FUMIGANTS *FT; GAMMAHCH *RN; OC *FT
[19] HEPTENOPHOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; HEPTENOPH *RN; OC *FT
[20] MALATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; MALATHION *RN; OC *FT
[21] METHIDATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; METHIDATH *RN; OC *FT
[22] METHOXYCHLOR *OC; INSECTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT; METHOXYCL *RN; OC *FT
[23] MEVINPHOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; MEVINPHOS *RN; OC *FT
[24] PARATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PARATHION *RN; OC *FT
[25] PARATHION-METHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PARATHIM *RN; OC *FT
[26] PHOSALONE *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PHOSALONE *RN; OC *FT
[27] PHOSMET *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PHOSMET *RN; OC *FT
[28] PIRIMIPHOS-METHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; FUMIGANTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PIRIMIPHM *RN; OC *FT
[29] TETRACHLORVINPHOS *OC; INSECTICIDES *FT; ANTICHOLINESTERASES *FT;. . .
[10] DIAZINON *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DIAZINON *RN; OC *FT
[11] DICHLORVOS *OC; INSECTICIDES *FT; FUMIGANTS *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DICHLORVO *RN; OC *FT
[12] DIMETHOATE *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DIMETHOAT *RN; OC *FT
[13] DIOXATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DIOXATHIO *RN; OC *FT
[14] ENDOSULFAN-ALPHA *OC; ENDOSULAL *RN; INSECTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT;. . . *OC; INSECTICIDES *FT; RODENTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT; FUMIGANTS *FT; GAMMAHCH *RN; OC *FT
[19] HEPTENOPHOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; HEPTENOPH *RN; OC *FT
[20] MALATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; MALATHION *RN; OC *FT
[21] METHIDATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; METHIDATH *RN; OC *FT
[22] METHOXYCHLOR *OC; INSECTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT; METHOXYCL *RN; OC *FT
[23] MEVINPHOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS

*FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; MEVINPHOS *RN; OC *FT

[24] PARATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PARATHION *RN; OC *FT

[25] PARATHION-METHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PARATHIM *RN; OC *FT

[26] PHOSALONE *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PHOSALONE *RN; OC *FT

[27] PHOSMET *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PHOSMET *RN; OC *FT

[28] PIRIMIPHOS-METHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; FUMIGANTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PIRIMIPHM *RN; OC *FT

[29] TETRACHLORVINPHOS *OC; INSECTICIDES *FT; ANTICHOLINESTERASES *FT;. . .

[12] DIMETHOATE *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DIMETHOAT *RN; OC *FT

[13] DIOXATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DIOXATHIO *RN; OC *FT

[14] ENDOSULFAN-ALPHA *OC; ENDOSULAL *RN; INSECTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT;. . . *OC; INSECTICIDES *FT; RODENTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT; FUMIGANTS *FT; GAMMAHCH *RN; OC *FT

[19] HEPTENOPHOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; HEPTENOPH *RN; OC *FT

[20] MALATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; MALATHION *RN; OC *FT

[21] METHIDATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; METHIDATH *RN; OC *FT

[22] METHOXYCHLOR *OC; INSECTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT; METHOXYCL *RN; OC *FT

[23] MEVINPHOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; MEVINPHOS *RN; OC *FT

[24] PARATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PARATHION *RN; OC *FT

[25] PARATHION-METHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PARATHIM *RN; OC *FT

[26] PHOSALONE *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PHOSALONE *RN; OC *FT

[27] PHOSMET *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PHOSMET *RN; OC *FT

[28] PIRIMIPHOS-METHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; FUMIGANTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PIRIMIPHM *RN; OC *FT

[29] TETRACHLORVINPHOS *OC; INSECTICIDES *FT; ANTICHOLINESTERASES *FT;. . .

[13] DIOXATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DIOXATHIO *RN; OC *FT

[14] ENDOSULFAN-ALPHA *OC; ENDOSULAL *RN; INSECTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT;. . . *OC; INSECTICIDES *FT; RODENTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT; FUMIGANTS *FT; GAMMAHCH *RN; OC *FT

[19] HEPTENOPHOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; HEPTENOPH *RN; OC *FT

[20] MALATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; MALATHION *RN; OC *FT

[21] METHIDATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; METHIDATH *RN; OC *FT

[22] METHOXYCHLOR *OC; INSECTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT; METHOXYCL *RN; OC *FT

[23] MEVINPHOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; MEVINPHOS *RN; OC *FT

[24] PARATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PARATHION *RN; OC *FT

[25] PARATHION-METHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PARATHIM *RN; OC *FT

[26] PHOSALONE *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PHOSALONE *RN; OC *FT

[27] PHOSMET *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PHOSMET *RN; OC *FT

[28] PIRIMIPHOS-METHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; FUMIGANTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PIRIMIPHM *RN; OC *FT

[29] TETRACHLORVINPHOS *OC; INSECTICIDES *FT; ANTICHOLINESTERASES *FT;. . .

[19] HEPTENOPHOS *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; HEPTENOPH *RN; OC *FT

[20] MALATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; MALATHION *RN; OC *FT

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[24] PARATHION *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PARATHION *RN; OC *FT

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[27] PHOSMET *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PHOSMET *RN; OC *FT

[28] PIRIMIPHOS-METHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; FUMIGANTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PIRIMIPHM *RN; OC *FT

[29] TETRACHLORVINPHOS *OC; INSECTICIDES *FT; ANTICHOLINESTERASES *FT;. . .

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CONTACTS *FT; FUMIGANTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PIRIMIPHM *RN; OC *FT
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[27] PHOSMET *OC; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PHOSMET *RN; OC *FT
[28] PIRIMIPHOS-METHYL *OC; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; FUMIGANTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PIRIMIPHM *RN; OC *FT
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[29] TETRACHLORVINPHOS *OC; INSECTICIDES *FT; ANTICHOLINESTERASES *FT;. . .

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AN 1986-83035 CROPU Q I G
TI Toxicity of Fluvalinate to **Bees**.
(Toxicite du Fluvalinate sur les Abeilles.))
AU Barnavon M
CS Sandoz
LO Rueil-Malmaison, Fr.
SO Def.Veg. (39, No. 236, 8-15, 1985) 4 Fig. 9 Tab. 13 Ref. (U88/JAH)
CODEN: DEVEAA
AV Produits Sandoz, 14, boulevard Richelieu, B.P. 115, 92505 Rueil-Malmaison, France.
DT Journal
LA English
FA AB; LA; CT
AB The toxicity of the pyrethroid **pesticide** fluvalinate to domestic **bees** (**Apis** mellifera) was determined by dusting, topical application in **acetone** solution and by ingestion in 67% honey solution, and was found to be low. In field tests on wheat, alfalfa, mustard and Phacelia, the fluvalinate preparations Klartan and Mavrik could be safely used at normal (144 g/ha) rates of application without damage to the **bees**. Phosalone (Zolone, 33%) and fenvalerate, used as non-toxic standards, had no adverse effects on the **bees**, though parathion (Ekatox) lindane (gamma-HCH) and dimethoate caused rapid and severe kill in **bees**.

TI Toxicity of Fluvalinate to **Bees**.
(Toxicite du Fluvalinate sur les Abeilles.))

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ABEX Fluvalinate was used at 36 g/ha against cereal aphids, which are visited by **bees** collecting honeydew, but the **bees** were unaffected. Fenvalerate was a repellent to **bees**, but fluvalinate was not.

CT **BEE** *SE; TOX. *FT; LAB.TEST *FT

[01]. . . TOPICAL *FT; INGESTION *FT; LOW *FT; DOSAGE *FT; FIELD *FT; FR. *FT; FORMULATION *FT; APPL.TECHNIQUE *FT; AREA-EUROPE *FT; INSECTICIDES *FT; **ACARICIDES** *FT; FLUVALINA *RN; SE *FT; TR *FT

[02] PHOSALONE *TR; ZOLONE *TR; EMULSION *FT; ABSENCE *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PHOSALONE *RN; TR *FT

[03] FENVALERATE *TR; ABSENCE *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; FENVALERA *RN; TR *FT

[04] PARATHION *TR; EKATOX *TR; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PARATHION *RN; TR *FT

[05] GAMMA-HCH *TR; INSECTICIDES *FT; RODENTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT; FUMIGANTS *FT; GAMMAHCH *RN; TR *FT

[06] DIMETHOATE *TR; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DIMETHOAT *RN; TR *FT

[02] PHOSALONE *TR; ZOLONE *TR; EMULSION *FT; ABSENCE *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PHOSALONE *RN; TR *FT

[03] FENVALERATE *TR; ABSENCE *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; FENVALERA *RN; TR *FT

[04] PARATHION *TR; EKATOX *TR; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PARATHION *RN; TR *FT

[05] GAMMA-HCH *TR; INSECTICIDES *FT; RODENTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT; FUMIGANTS *FT; GAMMAHCH *RN; TR *FT

[06] DIMETHOATE *TR; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DIMETHOAT *RN; TR *FT

[03] FENVALERATE *TR; ABSENCE *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; FENVALERA *RN; TR *FT

[04] PARATHION *TR; EKATOX *TR; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PARATHION *RN; TR *FT

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[05] GAMMA-HCH *TR; INSECTICIDES *FT; RODENTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT; FUMIGANTS *FT; GAMMAHCH *RN; TR *FT

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AN 1985-80225 CROPU A I S

TI Analysis of Insecticides Residues in Small Quantities of Nectar, Part II: Analysis of Propoxur and Phosalone; results of the Residue Analysis. (Nachweis Von Insektizid-Rueckstaenden In Kleinen Nektarmengen, Teil II: Nachweis Von Propoxur Und Phosalone; Ergebnisse Der Ruekstandsanalysen.) Institut fuer Landwirtschaftliche Zoologie und Bienenkunde der Universitaet Bonn, Gut Melb, Melbweg 42, 5300 Bonn 1, West German)

AU Fiedler L; Drescher W

LO Bonn, Ger.

SO Chemosphere (13, No. 9, 985-90, 1984) 2 Tab. 4 Ref
CODEN: CMSHAF

DT Journal

LA German

FA AB; LA; CT; MPC

AB A GLC technique for the determination of propoxur and phosalone in nectar was described. The technique was applied to a residue analysis of nectar from apple, cherry and raspberry blossoms after treatment with Orthene (acephate), Perfekthion (dimethoate), propoxur (Unden fleussig) and Rubitox SP (phosalone) at commercially recommended concentrations.

ABEX. . . . organic layer dried in a column packed with anhydrous Na2SO4. The solvent was removed and the extracted material dissolved in **acetone** and analyzed by GLC (3% OV-17 on Chromosorb W-HP for the determination of propoxur, and 4% SE-30 on Varaport 30. . . respective metabolites, methamidophos and omethoate, by a previously reported technique. Residue levels were tabulated. A series of feeding tests on honey-**bees** will be carried out (no details).

[02] DIMETHOATE *OC; DIMETHOATE *DM; PERFEKTHION *OC; PERFEKTHION *DM; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; APPL.TIME *FT; PRE-BLOOM *FT; DIMETHOAT *RN; OC *FT; DM *FT

[03] . . . *FT; PRE-BLOOM *FT; PROPOXUR *RN; OC *FT; DM *FT

[04] PHOSALONE *OC; PHOSALONE *DM; RUBITOX *OC; RUBITOX *DM; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; APPL.TIME *FT; PRE-BLOOM *FT; PHOSALONE *RN; OC *FT; DM *FT

[05] METHAMIDOPHOS *OC; METHAMIDOPHOS *DM; METABOLITE *FT; INSECTICIDES *FT; **ACARICIDES** *FT; SYSTEMICS *FT; CONTACTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; METHAMIDO *RN; OC *FT; DM *FT

[06] OMETHOATE *OC; OMETHOATE *DM; METABOLITE *FT; INSECTICIDES *FT; **ACARICIDES** *FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; OMETHOATE *RN; OC *FT; DM *FT

[04] PHOSALONE *OC; PHOSALONE *DM; RUBITOX *OC; RUBITOX *DM; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; APPL.TIME *FT; PRE-BLOOM *FT; PHOSALONE *RN; OC *FT; DM *FT

[05] METHAMIDOPHOS *OC; METHAMIDOPHOS *DM; METABOLITE *FT; INSECTICIDES *FT; **ACARICIDES** *FT; SYSTEMICS *FT; CONTACTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; METHAMIDO *RN; OC *FT; DM *FT

[06] OMETHOATE *OC; OMETHOATE *DM; METABOLITE *FT; INSECTICIDES *FT; **ACARICIDES** *FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; OMETHOATE *RN; OC *FT; DM *FT

[05] METHAMIDOPHOS *OC; METHAMIDOPHOS *DM; METABOLITE *FT; INSECTICIDES

*FT; **ACARICIDES** *FT; SYSTEMICS *FT; CONTACTS *FT;
ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; METHAMIDO *RN; OC *FT;
DM *FT

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ORGANOPHOSPHORUS *FT; OMETHOATE *RN; OC *FT; DM *FT

L7 ANSWER 61 OF 85 CROPU

AN 1985-84364 CROPU I

TI Laboratory Assessment of Insecticide Selectivity - Practical Relevance.

AU Stevenson J H; Smart L E; Walters J H H

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AV Rothamsted Experimental Station, Harpenden, Herts, AL5 2JQ, England.

DT Conference

LA English

FA AB; LA; CT

AB In laboratory tests, pyrethroids (bioallethrin, flucythrinate, permethrin, deltamethrin, bioresmethrin, fenvalerate) were 8-100 x more toxic to Ephestia kuehniella than to its **parasite** Venturia canescens. Hazard estimates based on the ratio between laboratory toxicity (LD50) and field treatment rate had a useful prediction value for **honeybees** which has been confirmed by field observations. When pirimicarb and phosalone were included the selectivity range was x 0.39 to x 97.0 indicating the importance of such data in insecticide selection. Tests including demeton-S-methyl and triazophos were carried out with **honeybees,** Chrysopa carnea and Aphidius matricariae. C. carnea was tolerant to some pyrethroid but A. matricariae were at high risk, except from pirimicarb.

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ABEX Toxicity of technical grade insecticides was made topically by micro-applicator. Solvents and drop sizes were: for E. kuhniella adults **acetone** 1 ul, V. canescens adults **acetone** 0.5 ul, **honeybee** worker adults **acetone** 1.0 ul, C. carnea larvae **butanone** 0.25 ul, A. matricariae adults **butanone** 0.05 ul, larvae in mummified aphids **butanone** 0.1 ul. 24 And 48 hr mortality was estimated. Values were compared to typical field rates recommended for aphid control,. . . lack of hazard. Field trials by other workers have confirmed that permethrin, cypermethrin and deltamethrin are not dangerous to foraging **honeybees** but demeton-S-methyl and triazophos are hazardous.

CT . . . EPHESTIA *TR; PYRALIDAE *TR; LEPIDOPTERA *TR; KUEHNIELLA *TR;
VENTURIA *SE; DOTHIDEALES *SE; ASCOMYCOTINA *SE; CANESCENS *SE;
INSECTICIDE *FT; INSECTICIDES *FT; **ACARICIDES** *FT;
INSECT-REPELLENTS *FT; CONTACTS *FT; STOMACH-POISONS *FT; FLUCYTHRI
*RN; TR *FT; SE *FT

[03] BIORESMETHRIN *TR; BIORESMETHRIN *SE; EPHESTIA *TR;. . . EPHESTIA

*TR; PYRALIDAE *TR; LEPIDOPTERA *TR; KUEHNIELLA *TR; VENTURIA *SE; DOTHIDEALES *SE; ASCOMYCOTINA *SE; CANESCENS *SE; INSECTICIDE *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; FENVALERA *RN; TR *FT; SE *FT

[05] PERMETHRIN *TR; PERMETHRIN *SE; EPHESTIA *TR; PYRALIDAE *TR; LEPIDOPTERA *TR;. . . KUEHNIELLA *TR; VENTURIA *SE; DOTHIDEALES *SE; ASCOMYCOTINA *SE; CANESCENS *SE; APHIDIUS *SE; APHIDIIDAE *SE; HYMENOPTERA *SE; PREDATOR *SE; MATRICARIAE *SE; **APIS** *SE; MELLIFERA *SE; APIDAE *SE; **BEE** *SE; CHRYSOPA *SE; CARNEA *SE; CHRYSOPIDAE *SE; NEUROPTERA *SE; INSECTICIDE *FT; DOSAGE *FT; FIELD *FT; INSECTICIDES *FT; CONTACTS *FT; PERMETHRI. . . KUEHNIELLA *TR; VENTURIA *SE; DOTHIDEALES *SE; ASCOMYCOTINA *SE; CANESCENS *SE; APHIDIUS *SE; APHIDIIDAE *SE; HYMENOPTERA *SE; PREDATOR *SE; MATRICARIAE *TR; **APIS** *SE; MELLIFERA *SE; APIDAE *SE; **BEE** *SE; CHRYSOPA *SE; CHRYSOPIDAE *SE; CARNEA *SE; NEUROPTERA *SE; INSECTICIDE *FT; DOSAGE *FT; FIELD *FT; INSECTICIDES *FT; CONTACTS *FT; STOMACH-POISONS. . . KUEHNIELLA *TR; VENTURIA *SE; DOTHIDEALES *SE; ASCOMYCOTINA *SE; CANESCENS *SE; APHIDIUS *SE; APHIDIIDAE *SE; HYMENOPTERA *SE; PREDATOR *SE; MATRICARIAE *SE; **APIS** *SE; MELLIFERA *SE; APIDAE *SE; **BEE** *SE; CHRYSOPA *SE; CARNEA *SE; CHRYSOPIDAE *SE; NEUROPTERA *SE; INSECTICIDE *FT; DOSAGE *FT; FIELD *FT; INSECTICIDES *FT; FUMIGANTS *FT; SYSTEMICS. . . KUEHNIELLA *TR; VENTURIA *SE; DOTHIDEALES *SE; ASCOMYCOTINA *SE; CANESCENS *SE; APHIDIUS *SE; APHIDIIDAE *SE; HYMENOPTERA *SE; PREDATOR *SE; MATRICARIAE *SE; **APIS** *SE; MELLIFERA *SE; APIDAE *SE; **BEE** *SE; CHRYSOPA *SE; CARNEA *SE; CHRYSOPIDAE *SE; NEUROPTERA *SE; INSECTICIDE *FT; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PHOSALONE *RN; TR *FT; SE *FT

[09] CYPERMETHRIN *SE; APHIDIUS *SE; APHIDIIDAE *SE; HYMENOPTERA *SE; PREDATOR *SE; MATRICARIAE *SE; **APIS** *SE; MELLIFERA *SE; APIDAE *SE; **BEE** *SE; CHRYSOPA *SE; CARNEA *SE; CHRYSOPIDAE *SE; NEUROPTERA *SE; DOSAGE *FT; FIELD *FT; INSECTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT; CYPERMETH *RN; SE *FT

[10] DEMETON-S-METHYL *SE; APHIDIUS *SE; APHIDIIDAE *SE; HYMENOPTERA *SE; PREDATOR *SE; MATRICARIAE *SE; **APIS** *SE; MELLIFERA *SE; APIDAE *SE; **BEE** *SE; CHRYSOPA *SE; CARNEA *SE; CHRYSOPIDAE *SE; NEUROPTERA *SE; DOSAGE *FT; FIELD *FT; INSECTICIDES *FT; **ACARICIDES** *FT; SYSTEMICS *FT; CONTACTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DEMETONSM *RN; SE *FT

[11] TRIAZOPHOS *SE; APHIDIUS *SE; APHIDIIDAE *SE; HYMENOPTERA *SE; PREDATOR *SE; MATRICARIAE *SE; **APIS** *SE; MELLIFERA *SE; APIDAE *SE; **BEE** *SE; CHRYSOPA *SE; CARNEA *SE; CHRYSOPIDAE *SE; NEUROPTERA *SE; DOSAGE *FT; FIELD *FT; INSECTICIDES *FT; **ACARICIDES** *FT; NEMATICIDES *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; TRIAZOPHO *RN; SE *FT

[04]. . . EPHESTIA *TR; PYRALIDAE *TR; LEPIDOPTERA *TR; KUEHNIELLA *TR; VENTURIA *SE; DOTHIDEALES *SE; ASCOMYCOTINA *SE; CANESCENS *SE; INSECTICIDE *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; FENVALERA *RN; TR *FT; SE *FT

[05] PERMETHRIN *TR; PERMETHRIN *SE; EPHESTIA *TR; PYRALIDAE *TR; LEPIDOPTERA *TR;. . . KUEHNIELLA *TR; VENTURIA *SE; DOTHIDEALES *SE; ASCOMYCOTINA *SE; CANESCENS *SE; APHIDIUS *SE; APHIDIIDAE *SE; HYMENOPTERA *SE; PREDATOR *SE; MATRICARIAE *SE; **APIS** *SE; MELLIFERA *SE; APIDAE *SE; **BEE** *SE; CHRYSOPA *SE; CARNEA *SE; CHRYSOPIDAE *SE; NEUROPTERA *SE; INSECTICIDE *FT; DOSAGE *FT; FIELD *FT; INSECTICIDES *FT; CONTACTS *FT; PERMETHRI. . . KUEHNIELLA *TR; VENTURIA *SE; DOTHIDEALES *SE; ASCOMYCOTINA *SE; CANESCENS *SE; APHIDIUS *SE; APHIDIIDAE *SE; HYMENOPTERA *SE; PREDATOR *SE; MATRICARIAE *TR; **APIS** *SE; MELLIFERA *SE; APIDAE *SE; **BEE** *SE; CHRYSOPA *SE; CHRYSOPIDAE *SE; CARNEA *SE; NEUROPTERA *SE; INSECTICIDE *FT; DOSAGE *FT; FIELD *FT; INSECTICIDES *FT;

CONTACTS *FT; STOMACH-POISONS. . . KUEHNIELLA *TR; VENTURIA *SE; DOTHIDEALES *SE; ASCOMYCOTINA *SE; CANESCENS *SE; APHIDIUS *SE; APHIDIIDAE *SE; HYMENOPTERA *SE; PREDATOR *SE; MATRICARIAE *SE; **APIS** *SE; MELLIFERA *SE; APIDAE *SE; **BEE** *SE; CHRYSOPA *SE; CARNEA *SE; CHRYSOPIDAE *SE; NEUROPTERA *SE; INSECTICIDE *FT; DOSAGE *FT; FIELD *FT; INSECTICIDES *FT; FUMIGANTS *FT; SYSTEMICS. . . KUEHNIELLA *TR; VENTURIA *SE; DOTHIDEALES *SE; ASCOMYCOTINA *SE; CANESCENS *SE; APHIDIUS *SE; APHIDIIDAE *SE; HYMENOPTERA *SE; PREDATOR *SE; MATRICARIAE *SE; **APIS** *SE; MELLIFERA *SE; APIDAE *SE; **BEE** *SE; CHRYSOPA *SE; CARNEA *SE; CHRYSOPIDAE *SE; NEUROPTERA *SE; INSECTICIDE *FT; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PHOSALONE *RN; TR *FT; SE *FT

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[10] DEMETON-S-METHYL *SE; APHIDIUS *SE; APHIDIIDAE *SE; HYMENOPTERA *SE; PREDATOR *SE; MATRICARIAE *SE; **APIS** *SE; MELLIFERA *SE; APIDAE *SE; **BEE** *SE; CHRYSOPA *SE; CARNEA *SE; CHRYSOPIDAE *SE; NEUROPTERA *SE; DOSAGE *FT; FIELD *FT; INSECTICIDES *FT; **ACARICIDES** *FT; SYSTEMICS *FT; CONTACTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DEMETONSM *RN; SE *FT

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*SE; NEUROPTERA *SE; DOSAGE *FT; FIELD *FT; INSECTICIDES *FT; **ACARICIDES** *FT; SYSTEMICS *FT; CONTACTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DEMETONSM *RN; SE *FT

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[06]. . . KUEHNIELLA *TR; VENTURIA *SE; DOTHIDEALES *SE; ASCOMYCOTINA *SE; CANESCENS *SE; APHIDIUS *SE; APHIDIIDAE *SE; HYMENOPTERA *SE; PREDATOR *SE; MATRICARIAE *TR; **APIS** *SE; MELLIFERA *SE; APIDAE *SE; **BEE** *SE; CHRYSOPA *SE; CHRYSOPIDAE *SE; CARNEA *SE; NEUROPTERA *SE; INSECTICIDE *FT; DOSAGE *FT; FIELD *FT; INSECTICIDES *FT; CONTACTS *FT; STOMACH-POISONS. . . KUEHNIELLA *TR; VENTURIA *SE; DOTHIDEALES *SE; ASCOMYCOTINA *SE; CANESCENS *SE; APHIDIUS *SE; APHIDIIDAE *SE; HYMENOPTERA *SE; PREDATOR *SE; MATRICARIAE *SE; **APIS** *SE; MELLIFERA *SE; APIDAE *SE; **BEE** *SE; CHRYSOPA *SE; CARNEA *SE; CHRYSOPIDAE *SE; NEUROPTERA *SE; INSECTICIDE *FT; DOSAGE *FT; FIELD *FT; INSECTICIDES *FT; FUMIGANTS *FT; SYSTEMICS. . . KUEHNIELLA *TR; VENTURIA *SE; DOTHIDEALES *SE; ASCOMYCOTINA *SE; CANESCENS *SE; APHIDIUS *SE; APHIDIIDAE *SE; HYMENOPTERA *SE; PREDATOR *SE; MATRICARIAE *SE; **APIS** *SE; MELLIFERA *SE; APIDAE *SE; **BEE** *SE; CHRYSOPA *SE; CARNEA *SE; CHRYSOPIDAE *SE; NEUROPTERA *SE; INSECTICIDE *FT; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PHOSALONE *RN; TR *FT; SE *FT

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[07]. . . KUEHNIELLA *TR; VENTURIA *SE; DOTHIDEALES *SE; ASCOMYCOTINA *SE; CANESCENS *SE; APHIDIUS *SE; APHIDIIDAE *SE; HYMENOPTERA *SE; PREDATOR *SE; MATRICARIAE *SE; **APIS** *SE; MELLIFERA *SE; APIDAE *SE; **BEE** *SE; CHRYSOPA *SE; CARNEA *SE; CHRYSOPIDAE *SE; NEUROPTERA *SE; INSECTICIDE *FT; DOSAGE *FT; FIELD *FT; INSECTICIDES *FT; FUMIGANTS *FT; SYSTEMICS. . . KUEHNIELLA *TR; VENTURIA *SE; DOTHIDEALES *SE; ASCOMYCOTINA *SE; CANESCENS *SE; APHIDIUS *SE; APHIDIIDAE *SE; HYMENOPTERA *SE; PREDATOR *SE; MATRICARIAE *SE; **APIS** *SE; MELLIFERA *SE; APIDAE *SE; **BEE** *SE; CHRYSOPA *SE; CARNEA *SE; CHRYSOPIDAE *SE; NEUROPTERA *SE; INSECTICIDE *FT; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PHOSALONE *RN; TR *FT; SE *FT

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[08]. . . KUEHNIELLA *TR; VENTURIA *SE; DOTHIDEALES *SE; ASCOMYCOTINA *SE; CANESCENS *SE; APHIDIUS *SE; APHIDIIDAE *SE; HYMENOPTERA *SE; PREDATOR *SE; MATRICARIAE *SE; **APIS** *SE; MELLIFERA *SE; APIDAE *SE; **BEE** *SE; CHRYSOPA *SE; CARNEA *SE; CHRYSOPIDAE *SE; NEUROPTERA *SE; INSECTICIDE *FT; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; PHOSALONE *RN; TR *FT; SE *FT

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[11] TRIAZOPHOS *SE; APHIDIUS *SE; APHIDIIDAE *SE; HYMENOPTERA *SE; PREDATOR *SE; MATRICARIAE *SE; **APIS** *SE; MELLIFERA *SE; APIDAE *SE; **BEE** *SE; CHRYSOPA *SE; CARNEA *SE; CHRYSOPIDAE *SE; NEUROPTERA *SE; DOSAGE *FT; FIELD *FT; INSECTICIDES *FT; **ACARICIDES** *FT; NEMATICIDES *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; TRIAZOPHO *RN; SE *FT

[09] CYPERMETHRIN *SE; APHIDIUS *SE; APHIDIIDAE *SE; HYMENOPTERA *SE; PREDATOR *SE; MATRICARIAE *SE; **APIS** *SE; MELLIFERA *SE; APIDAE *SE; **BEE** *SE; CHRYSOPA *SE; CARNEA *SE; CHRYSOPIDAE *SE; NEUROPTERA *SE; DOSAGE *FT; FIELD *FT; INSECTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT; CYPERMETH *RN; SE *FT

[10] DEMETON-S-METHYL *SE; APHIDIUS *SE; APHIDIIDAE *SE; HYMENOPTERA *SE; PREDATOR *SE; MATRICARIAE *SE; **APIS** *SE; MELLIFERA *SE; APIDAE *SE; **BEE** *SE; CHRYSOPA *SE; CARNEA *SE; CHRYSOPIDAE *SE; NEUROPTERA *SE; DOSAGE *FT; FIELD *FT; INSECTICIDES *FT; **ACARICIDES** *FT; SYSTEMICS *FT; CONTACTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DEMETONSM *RN; SE *FT

[11] TRIAZOPHOS *SE; APHIDIUS *SE; APHIDIIDAE *SE; HYMENOPTERA *SE; PREDATOR *SE; MATRICARIAE *SE; **APIS** *SE; MELLIFERA *SE; APIDAE *SE; **BEE** *SE; CHRYSOPA *SE; CARNEA *SE; CHRYSOPIDAE *SE; NEUROPTERA *SE; DOSAGE *FT; FIELD *FT; INSECTICIDES *FT; **ACARICIDES** *FT; NEMATICIDES *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; TRIAZOPHO *RN; SE *FT

[10] DEMETON-S-METHYL *SE; APHIDIUS *SE; APHIDIIDAE *SE; HYMENOPTERA *SE; PREDATOR *SE; MATRICARIAE *SE; **APIS** *SE; MELLIFERA *SE; APIDAE *SE; **BEE** *SE; CHRYSOPA *SE; CARNEA *SE; CHRYSOPIDAE *SE; NEUROPTERA *SE; DOSAGE *FT; FIELD *FT; INSECTICIDES *FT; **ACARICIDES** *FT; SYSTEMICS *FT; CONTACTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; DEMETONSM *RN; SE *FT

[11] TRIAZOPHOS *SE; APHIDIUS *SE; APHIDIIDAE *SE; HYMENOPTERA *SE; PREDATOR *SE; MATRICARIAE *SE; **APIS** *SE; MELLIFERA *SE; APIDAE *SE; **BEE** *SE; CHRYSOPA *SE; CARNEA *SE; CHRYSOPIDAE

*SE; NEUROPTERA *SE; DOSAGE *FT; FIELD *FT; INSECTICIDES *FT;
ACARICIDES *FT; NEMATICIDES *FT; ANTICHOLINESTERASES *FT;
ORGANOPHOSPHORUS *FT; TRIAZOPHO *RN; SE *FT

[11] TRIAZOPHOS *SE; APHIDIUS *SE; APHIDIIDAE *SE; HYMENOPTERA *SE;
PREDATOR *SE; MATRICARIAE *SE; **APIS** *SE; MELLIFERA *SE;
APIDAE *SE; **BEE** *SE; CHRYSOPA *SE; CARNEA *SE; CHRYSOPIDAE
*SE; NEUROPTERA *SE; DOSAGE *FT; FIELD *FT; INSECTICIDES *FT;
ACARICIDES *FT; NEMATICIDES *FT; ANTICHOLINESTERASES *FT;
ORGANOPHOSPHORUS *FT; TRIAZOPHO *RN; SE *FT

L7 ANSWER 62 OF 85 CROPU COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1985-84360 CROPU I

TI PP321 - Effect on Honey **Bees**.

AU Gough H J, Wilkinson W

CS ICI

LO Bracknell, U.K.

SO Proc.Br.Crop Prot.Conf.Pests Dis. (1, 331-35, 1984) 2 Tab. 7 Ref
CODEN: PBCDDQ

AV ICI Plant Protection Division, Jealott's Hill Research Station,
Bracknell, Berkshire, RG12 6EY, England.

DT Conference

LA English

FA AB; LA; CT

AB The effect of Karate, PP-321 (cyhalothrin) on honey **bees** was examined in laboratory tests. LD50 tests showed that PP-321 is less active on honey **bees** orally than cypermethrin and permethrin and possibly less so by contact than cypermethrin. When 10 g/ha PP-321 was applied at mid-day to flowering winter rape there was no lethal action or sublethal effect on foraging **honeybees** compared with Gusathion MS (azinphos-methyl, AM) 420 g/ha which reduced foraging. PP-321 is more active than cypermethrin and permethrin against **pests**, but more selective to **honeybees**.

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ABEX In topical LD50 tests, PP-321 was applied in 1 ul drops. Technical material was dissolved in **acetone** and formulated product was applied in water. The formulated material showed a similar toxicity level to the technical material. The. . . . additional safety. In the field, 6 trials were made in 25 ha fields at least 1 km from any other **bee** forage source. 5 Healthy colonies of **bees** were moved into each field 2 days pre-spraying. In May, 1984, 2 consecutive tests were made using Gusathion MS and PP-321 5% EC and spraying by helicopter at 56 l/ha at midday when **bees** were actively foraging. AM was applied just after the PP-321 application on another field. Mortality and foraging activity were monitored.. . .

CT **APIS** *SE; APIDAE *SE; HYMENOPTERA *SE; **BEE** *SE;
MELLIFERA *SE; DECREASE *FT

[01]. . . LD50 *FT; LAB.TEST *FT; FIELD *FT; U.K. *FT; FORAGING *FT;
CONTACT *FT; P.O. *FT; AREA-EUROPE *FT; ACTION-MECHANISM *FT;
INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; CYHALOTHR
*RN; SE *FT; TR *FT

[02] PERMETHRIN *SE; LD50 *FT; LAB.TEST *FT; CONTACT *FT; P.O. *FT;. . .
GUSATHION-M *TR; RAPE *TR; OLEAGINOUS *TR; COLE *TR; CROP *TR; FIELD
*FT; U.K. *FT; FORAGING *FT; AREA-EUROPE *FT; INSECTICIDES *FT;

ACARICIDES *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; AZINPHOSM *RN; SE *FT; TR *FT

[04]. . . GUSATHION-M *TR; RAPE *TR; OLEAGINOUS *TR; COLE *TR; CROP *TR; FIELD *FT; U.K. *FT; FORAGING *FT; AREA-EUROPE *FT; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; AZINPHOSM *RN; SE *FT; TR *FT

L7 ANSWER 63 OF 85 CABA COPYRIGHT 2004 CABI on STN
AN 83:7521 CABA
DN 19830214043
TI Documenting honey **bee pesticide** loss
AU Bourke, J. B.; Morse, R. A.
SO American Bee Journal, (1982) Vol. 122, No. 11, pp. 780. B.
ISSN: 0002-7626
DT Journal
LA English
ED Entered STN: 19941101
Last Updated on STN: 19941101
AB Samples of dead **bees** being kept for analysis should be preserved in **acetone** (200 in 50 ml) and not frozen.
TI Documenting honey **bee pesticide** loss.
AB Samples of dead **bees** being kept for analysis should be preserved in **acetone** (200 in 50 ml) and not frozen.
BT **Apis**; Apidae; Hymenoptera; insects; arthropods; invertebrates; animals
CT poisoning; HONEY **BEES**; **pesticides**; diagnosis

L7 ANSWER 64 OF 85 CABA COPYRIGHT 2004 CABI on STN
AN 82:8177 CABA
DN 19820212920
TI A rapid, inexpensive, quantitative procedure for the extraction and analyses of Penncap-M (methyl parathion) from **honeybees** (**Apis** mellifera L.), beeswax, and pollen
AU Ross, B.; Harvey, J.
CS Honey Bee Pesticides/Diseases Res., USDA, SEA, University Stn., Laramie, WY 82071, USA.
SO Journal of Agricultural and Food Chemistry, (1981) Vol. 29, No. 5, pp. 1095-1096. B.
ISSN: 0021-8561
DT Journal
LA English
ED Entered STN: 19941101
Last Updated on STN: 19941101
AB The extraction procedure, which uses **acetone** + xylene (19:1), is reported. The analysis used gas-liquid chromatography. Mean recoveries for 6 concentrations of Penncap-M were 98.0, 97.8, and 94.2% from **honeybees**, beeswax, and pollen, respectively. Mean recovery of Penncap-M from honey seeded at 5 concentrations was 87.3%. [Chem.Abstr. 95 : 109547w (1981).] F. B. Wells
TI A rapid, inexpensive, quantitative procedure for the extraction and analyses of Penncap-M (methyl parathion) from **honeybees** (**Apis** mellifera L.), beeswax, and pollen.
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BT organothiophosphate insecticides; organophosphorus insecticides; insecticides; **pesticides**
CT parathion; honey; **pesticides**
ST toxic chemicals; detection in **bees**

L7 ANSWER 65 OF 85 CABA COPYRIGHT 2004 CABI on STN
AN 83:6780 CABA
DN 19820213111
TI Effects of Dimilin on the growth of **honeybee** larvae reared in an incubator
Wirkung von Dimilin auf das Wachstum von Bienenlarven (**Apis** mellifica, Hym., Apidae) bei der Aufzucht im Brutschrank
AU Czoppelt, C.; Rembold, H.
CS Max-Planck Inst. fur Biochemie, 8033 Martinsried bei Munchen, German Federal Republic.
SO Mitteilungen der Deutschen Gesellschaft fur Allgemeine und Angewandte Entomologie, (1981) Vol. 3, No. 1-3, pp. 191-195. B.
ISSN: 0344-9084
DT Journal
LA German
SL English
ED Entered STN: 19941101
Last Updated on STN: 19941101
AB The insect growth regulator Dimilin (diflubenzuron) was tested for its growth-disrupting activity on **honeybee** larvae which were reared in an incubator. Third-instar larvae (3.0-5.0 mg body weight), fed on royal jelly and yeast extract (RJ), were either topically applied or fed with various amounts of Dimilin dissolved in **acetone** and in RJ, respectively. Topical application of 30 ng Dimilin and more caused delayed larval development and prepupal mortality. At doses of 50 and 100 ng, larval survival was less than 26% followed by a prepupal death rate of more than 35%. In the feeding test, addition of 0.6-1.2 mu g Dimilin/ml RJ resulted in decreasing larval survival and complete mortality in the pupal stage. Poor larval growth was observed only after treatment with high doses (1.0, 1.2 mu l/ml) as compared to the control test. The LD50 for **honeybee** larvae was 50 ng per treated larva in the application test and 120 ng per larva in the feeding test; this exceeds the highest dose received in field applications. Author
TI [Effects of Dimilin on the growth of **honeybee** larvae reared in an incubator].
Wirkung von Dimilin auf das Wachstum von Bienenlarven (**Apis** mellifica, Hym., Apidae) bei der Aufzucht im Brutschrank.
AB The insect growth regulator Dimilin (diflubenzuron) was tested for its growth-disrupting activity on **honeybee** larvae which were reared in an incubator. Third-instar larvae (3.0-5.0 mg body weight), fed on royal jelly and yeast extract (RJ), were either topically applied or fed with various amounts of Dimilin dissolved in **acetone** and in RJ, respectively. Topical application of 30 ng Dimilin and more caused delayed larval development and prepupal mortality. At. . . observed only after treatment with high doses (1.0, 1.2 mu l/ml) as compared to the control test. The LD50 for **honeybee** larvae was 50 ng per treated larva in the application test and 120 ng per larva in the feeding test;. . .
BT **Apis**; Apidae; Hymenoptera; insects; arthropods; invertebrates; animals; chitin synthesis inhibitors; insect growth regulators; insecticides; **pesticides**
CT poisoning; HONEY **BEES**; diflubenzuron; larvae; development; toxicity

L7 ANSWER 66 OF 85 CABA COPYRIGHT 2004 CABI on STN
AN 83:7678 CABA
DN 19830214212
TI Susceptibility of **honeybees** to insecticides
AU Takeuchi, K.; Higo, M.; Sakai, I.
CS Fac. Agric., Tamagawa Univ., Machida-shi, Tokyo 194, Japan.
SO Bulletin of the Faculty of Agriculture, Tamagawa University, (1980) No. 20, pp. 40-46.

DT Journal

LA Japanese

ED Entered STN: 19941101
Last Updated on STN: 19941101

AB Worker **honeybees** which had emerged within 24 h in an incubator were collected, marked and returned to a colony. After 6 days these **bees** were subjected to topical applications of **acetone** solutions of 5 insecticides; all were highly toxic. Sevin (carbaryl) and MTMC (m-tolyl methylcarbamate) showed more immediate effects than the other 3 (organophosphate) insecticides. Both carbamates, when contacted at lethal doses, caused the **bees** to disgorge honey or sting each other immediately after the application, and then to die within 1--2 h. LD50 values 24 h after application were (in mu g/**bee**): fenitrothion, 0.13; diazinon, 0.24; malathion, 0.29; carbaryl, 0.22; MTMC 0.52.

TI Susceptibility of **honeybees** to insecticides.

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BT **Apis**; Apidae; Hymenoptera; insects; arthropods; invertebrates; animals; carbamate insecticides; insecticides; **pesticides**; carbamate **pesticides**; organothiophosphate insecticides; organophosphorus insecticides

CT poisoning; HONEY **BEES**; carbaryl; diazinon; malathion; fenitrothion; toxicity

L7 ANSWER 67 OF 85 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 11

AN 1979:49668 CAPLUS

DN 90:49668

TI **Acaricide** preparations for diagnosis and control of ectoparasites of **bees**

IN Polyakov, A. A.; Yarnykh, V. S.; Smirnov, A. M.; Simetskii, M. A.; Kudryavtsev, E. A.; Talanov, G. A.; Zakomyrdin, A. A.; Rudenko, B. N.; Rakhmanin, P. P.; Gushin, V. N.

PA All-Union Scientific-Research Institute of Veterinary Sanitation, USSR

SO Ger. Offen., 16 pp.
CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2719722	A1	19781109	DE 1977-2719722	19770503
	DE 2719722	B2	19810423		
	DE 2719722	C3	19820422		
	US 4299816	A	19811110	US 1979-72554	19790904
PRAI	DE 1977-2719722		19770503		
	US 1977-804249		19770607		

AB N-methylcarbamates control **acariosis**, caused by **Acarapis** woodi, and varroatosis, caused by **Varroa** jacobsoni, in **honeybee**. Thus, application of a compn. contg. 0.025% by wt. Me N-methylcarbamate [6642-30-4], 19.975 **acetone**, and 80 Cl2F2C, to beehives, completely controlled **acariosis** and varroatosis (sic). The compds. were also useful for diagnosis, since their

application to infested **bees** led to the appearance of dead V. jacobsoni on the bottom of the hive.

TI **Acaricide** preparations for diagnosis and control of ectoparasites of **bees**

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ST **honeybee** carbamate **Varroa Acarapis**; **acaricide** carbamate **honeybee**

IT **Honeybee**
(**acariosis** and varroatosis control in, by methylcarbamates)

IT **Acarapis** woodi
Varroa jacobsoni
(control of, on **honeybee**, by methylcarbamate)

IT **Acaricides**
(methylcarbamates, for **acariosis** and varroatosis control, in **honeybee**)

IT 63-25-2 6642-30-4 69004-48-4
RL: BIOL (Biological study)
(**acariosis** and varroatosis control by, in **honeybee**)

L7 ANSWER 68 OF 85 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1979-32854B [17] WPIDS

TI **Acaricidal** compsn. for use against **bee parasites** - contg. methyl-carbamic acid di cresyl ester, **acetone** and Freon-12 for high activity and low toxicity.

DC C03

IN POLYAKOV, A A; SMIRNOV, A M; YARNYKH, V S

PA (VETE-R) VETERINARY SANIT

CYC 1

PI SU 592032 A 19780908 (197917)*

PRAI SU 1974-2047784 19740722

AB SU 592032 A UPAB: 19930901
Acaricidal compsn. useful against **bee** varroatosis contains as active agent w-methyl-carbamic acid dicresyl ester (I). It is used in a form of aerosol. The activity of the compsn. against Varoa jacobsoni **parasites** in **bees** is increased without killing the **bees** if the compsn. contains **acetone** (I) as solvent and freon-12 (RTM)(III) as propellant. The compsn. comprises (in %): (I) 0.01-0.03; (II) 19.99-29.97 and (III) 70-80. The compsn. is stable for 12 months if stored at 5-20 degrees C after prepn.

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AB SU 592032 UPAB: 19930901
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TT TT: **ACARID** COMPOSITION **BEE PARASITIC** CONTAIN METHYL CARBAMIC ACID DI CRESYL ESTER **ACETONE** FREON HIGH ACTIVE LOW TOXIC.

L7 ANSWER 69 OF 85 CABA COPYRIGHT 2004 CABI on STN

AN 77:7085 CABA
DN 19770206453
TI Diagnosis in **honeybees** of poisoning by plant protection preparations containing carbamates
Diagnostyka zatruc pszczol preparatami ochrony roslin z grupy karbaminianow
AU Sokolowski, M.; Jurkiewicz, G.
CS Zakladu Higieny Weterynaryjnej, Warszawa, Poland.
SO Medycyna Weterynaryjna, (1977) Vol. 33, No. 4, pp. 220-221. B.
ISSN: 0025-8628
DT Journal
LA Polish
SL English; Russian
ED Entered STN: 19941101
Last Updated on STN: 19941101
AB **Honeybees** were poisoned with either Gammakarbatox, containing lindane and carbaryl, or Karbatox Extra P, containing chlorfenvinphos and carbaryl. The latter decreased cholinesterase activity in the **bees** by 95.75%. After extraction, the individual insecticides were identified chromatographically. Carbaryl was separated on silica gel thin layers with a mixture of chloroform (9 parts) and **acetone** (1 part) as solvent, and revealed with a palladium choride reagent (Rf 0.62-0.64). Lindane was identified by gas chromatography and chlorfenvinphos by TLC. [Chem.Abstr. 87 : 63532s (1977).] F. B. Wells
TI [Diagnosis in **honeybees** of poisoning by plant protection preparations containing carbamates].
Diagnostyka zatruc pszczol preparatami ochrony roslin z grupy karbaminianow.
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BT carbamate insecticides; insecticides; **pesticides**; carbamate **pesticides**; animals; Hymenoptera; insects; arthropods; invertebrates; **Apis**; Apidae
CT **pesticides**; diagnosis; chromatography; carbaryl; determination; techniques; pollinators; pollination; agricultural entomology; poisoning
ORGN Apidae; **Apis** mellifera

L7 ANSWER 70 OF 85 CABA COPYRIGHT 2004 CABI on STN
AN 74:5169 CABA
DN 19730200408
TI Effects of certain internal and external factors on the resistance of **honeybees** to insecticides
Der Einfluss verschiedener Konstitutions- und Umweltfaktoren auf die Anfalligkeit der Honigbiene (**Apis** mellifica L.) gegenuber zwei Insektiziden Pflanzenschutzmitteln
AU Ladas, A.
CS Inst. Landwirtschaftliche Zoologie und Bienenkunde, Univ. Bonn, German Federal Republic.
SO Apidologie, (1972) Vol. 3, No. 1, pp. 55-78. EB.
ISSN: 0044-8435
DT Journal
LA German
SL English; French
ED Entered STN: 19941101
Last Updated on STN: 19941101
AB Diditan Ultra (80% DDT) was tested as a contact poison; it was dissolved

in **acetone** and sprayed uniformly on to circular cellophane discs which formed the top and bottom of test "cages". It was more toxic to young Carniolan **bees** than to older ones: at 35 deg C, LD50 for **bees** 5-9 days old was 216.5 X 10-6 g, distributed over a surface 75 cm2; for **bees** 22-26 days old, the value was 250.2. At 22 deg C values were lower. Carniolan and Italian **bees** were more susceptible to poisoning than Caucasian **bees**, perhaps because the latter are 10-20% heavier. Two inbred lines (Carniolan, F=0.25) were tested: LD50 for F1 generation **bees** was the same as for **bees** of the paternal colony, but higher than for **bees** of the maternal colony. Mortality was higher when tests were made in darkness. Nosema-infected **bees** gave LD50 33.4, healthy **bees** 45.7.Oral poisoning by Dipterex SP80 (80% phosphoric acid ester) was affected by the pH value of the solution; also LD50 values decreased with increasing temperature. Results were affected by a time lapse between preparation of the solution and feeding: the unstable active compound is converted to Dichlorvos which is more toxic. Feeding of 1.5 X 10-6 g/**bee** caused 100% mortality if imbibed 2 h after preparation, but only 15-30% if fed during the first 20 min.P. Walker.

TI [Effects of certain internal and external factors on the resistance of **honeybees** to insecticides].
Der Einfluss verschiedener Konstitutions- und Umweltfaktoren auf die Anfalligkeit der Honigbiene (**Apis** mellifica L.) gegenuber zwei Insektiziden Pflanzenschutzmitteln.

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BT **Apis**; Apidae; Hymenoptera; insects; arthropods; invertebrates; animals

CT **pesticides**; **bee** diseases; complications; techniques; zoology; poisoning; honey **bees**

L7 ANSWER 71 OF 85 CABA COPYRIGHT 2004 CABI on STN

AN 73:44062 CABA

DN 19730502842

TI Laboratory studies on the contact toxicity of some insecticides to **honeybees**

AU Harris, C. R.; Svec, H. J.

CS Research Institute, Canada Department of Agriculture, London, Ontario.

SO Proceedings of the Entomological Society of Ontario, (1969) Vol. 100, pp. 165-167. 2 ref.
ISSN: 0071-0768

DT Journal

LA English

ED Entered STN: 19941101
Last Updated on STN: 19941101

AB Tests were carried out on the contact toxicity to honey **bees** of some of the organophosphorus and carbamate insecticides being developed or recommended in place of organochlorine compounds. The insecticides were dissolved in a mixture of **acetone** and olive oil and applied to anaesthetised **bees** in a Potter spray tower. When 0.01% solutions of the toxicant were used, compounds showing higher toxicity than dieldrin were methomyl, mevinphos, Dursban, carbofuran, parathion, Dupont 1642 (methyl N-(carbamoyloxy)thioacetimidate), naled, azinphos-methyl, dimethoate, fensulfothion (Dasanit), carbaryl and phoxim (BAY 77488).

TI Laboratory studies on the contact toxicity of some insecticides to **honeybees**.

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BT **pesticides**; cyclodiene insecticides; organochlorine insecticides; insecticides; organochlorine **pesticides**; oxime carbamate insecticides; carbamate insecticides; carbamate **pesticides**; organophosphate insecticides; organophosphorus insecticides; organothiophosphate insecticides; **Apis**; Apidae; Hymenoptera; insects; arthropods; invertebrates; animals

CT insecticides; toxicity; dieldrin; methomyl; mevinphos; carbofuran; parathion; naled; azinphos-methyl; dimethoate; carbaryl; fensulfothion; phoxim; honey **bees**; **pest** control; control; **pesticides**; agricultural entomology; poisoning

ST **bees**, honey; Dursban; S-methyl N-(carbamoyloxy)thioacetimidate; toxicity of substance

L7 ANSWER 72 OF 85 CABA COPYRIGHT 2004 CABI on STN

AN 75:6077 CABA

DN 19740201714

TI Contact toxicity of some new insecticides and **acaricides** to **honeybees**

AU Ibrahim, S. H.; Madkour, A. M.; Selim, H. A.

CS Apiculture Res. Section, Min. Agric., Giza, Dokki, United Arab Republic.

SO Agricultural Research Review, United Arab Republic, (1967) Vol. 45, No. 2, pp. 141-146. B.

DT Journal

LA English

ED Entered STN: 19941101
Last Updated on STN: 19941101

AB The contact effect of carbaryl (Sevin), fenthion (Lebaycid), toxaphene, bromophos (Nexion), phosphamidon (Dimecron) and dicofol (Kelthane) was studied in the laboratory on **honeybees** confined for 6 h in wire screen cages (60-96/cage). Each cage had one glass side which had been sprayed once with an **acetone** solution of a **pesticide** at the normal application rate, or at a higher or lower rate. Mortality was recorded every 2 h. Fenthion was the most toxic, causing 100% mortality after 4 h exposure to a 0.033% concentration. The highest rates used of phosphamidon (0.05%) and carbaryl (0.235%) were the next most toxic, causing 100% mortality after 4 or 6 h. A phosphamidon + carbaryl mixture was more toxic than separate applications. The highest concentrations of toxaphene, bromophos and dicofol used (0.396, 9.471, 0.235% respectively) caused 0, 13.7 and 4.4% mortality after 6 h exposure.D.G. Lowe

TI Contact toxicity of some new insecticides and **acaricides** to **honeybees**.

AB . . . . effect of carbaryl (Sevin), fenthion (Lebaycid), toxaphene, bromophos (Nexion), phosphamidon (Dimecron) and dicofol (Kelthane) was

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BT **pesticides**; Hymenoptera; insects; arthropods; invertebrates; animals

CT sprays; insecticides; **acaricides**; cages; containers; poisoning

L7 ANSWER 73 OF 85 CAPLUS

AN 1966:442069 CAPLUS

DN 65:42069

OREF 65:7895e-g

TI Determination of organophosphorus insecticide residues using Cooke's emission spectroscopic detector

AU Bache, Carl A.; Lisk, Donald J.

CS Cornell Univ., Ithaca, NY

SO Residue Reviews (1966), 12, 35-44
CODEN: RREVAH; ISSN: 0080-181X

DT Journal

LA English

AB Improvements and addnl. reports of detns. are presented for a gas chromatograph with Cooke's Ar emission spectrometric detector as described by Bache and Lisk (CA 64, 1288a). The app. is shown in a diagram and a photograph. The 0.5 .times. 59 cm. glass column of the gas chromatograph contained a silicone grease on 80-100 mesh Chromosorb W. A flow regulator delivered Ar at 20-115 cc./min. The exit gas passed through the discharge of a Raytheon PGM-10 85-w. generator at 2540 .+-. 25 Me. delivered through a thickwalled capillary tube. The radiation incited was focused on the slit of an 0.5-m. Jarell-Ashe Ebert scanning spectrometer with a 30,000 lines/in. grating. Radiation of 2535.65 A. from the spectrometer fell on a 1P28 photomultiplier tube actuated by 680 v. whose output, amplified by a Philbrick UPA-2 amplifier, was automatically recorded. Occasional adjustment of the spectrometer by reference to the Hg line at 2536.52 A. is recommended. **Pesticides** were identified by their resp. retention times. After injection of the 5-.mu.l. sample, 2 min. was allowed for the escape of the solvent (Et2O, **acetone**, CHCl3, or hexane were tried) before the discharge was ignited by a Tesla coil. A table gives the sensitivities (1.4-9.2 .times. 10-12 g.) for 18 **pesticide** organophosphorus chemicals and the percentage of the full power of the generator recommended for each. Another table gives the recoveries (72-115%) of 6 of these toxicants added to 11 agricultural and food materials. The detns. were notably free of interference from substances extd. from samples and not removed from the sample soln. injected.

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IT Halibut.
Honeybees and(or) **Apis**
(parathion detn. in)

L7 ANSWER 74 OF 85 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1963:476886 CAPLUS
DN 59:76886
OREF 59:14332h,14333a-b
TI Column chromatography of insect esterases
AU Afsharpour, F.; O'Brien, R. D.
CS Cornell Univ., Ithaca, NY
SO Journal of Insect Physiology (1963), 9(4), 521-9
CODEN: JIPHAF; ISSN: 0022-1910
DT Journal
LA Unavailable

AB Homogenates (10%) in 0.005M tris(hydroxymethyl)aminomethane buffer (I) at pH 7.0 of American cockroach (Periplaneta americana), Colorado potato beetle (Leptinotarsa decemlineata), honey **bee** (A pis mellifera), housefly (Musca domestics) Wilson strain, Mexican bean beetle (Epilachna varivestis), milkweed bug (Oncopeltus fasciatus), and two-spotted **mite** (Tetranychus telarius) were centrifuged and the supernatant filtered and adjusted to pH 7.0. Ten ml. of enzyme were applied to 1.7 X 10 cm. columns of diethylaminoethyl cellulose which were then eluted with 1.75 ml., 0.005M I; 2.75 ml. 0.02M I; 3.60 ml. 0.33M I, and 4.60 ml. 0.33M I. Fifty fractions, each 5.6 ml., were collected. The fractions were assayed against indophenyl acetate [N-(4-acetoxyphenyl)p-quinoueimine] (II) (3.3 .times. 10-3M in EtOH), 5-bromoindoxyl acetate (III) (7.5 .times. 10-3M in **acetone**), and 1-naphthyl acetate (IV) (1.7 .times. 10-2M in **acetone**). Greatest activity against IV was shown by the two-spotted **mite** whilst the Colorado beetle and **bee** showed moderate activity. In all cases activity was highest in fractions 30-40. Of the other insects only the milkweed bug showed any great activity, mainly in fractions 1-10. Very little activity was shown by any species against II and only slight activity against III.

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IT **Honeybees** and(or) **Apis**
Houseflies

Insects
   (esterases in, chromatography of)
IT Tetranychus
   (telarius (includes two-spotted spider **mite**), esterases in, chromatography of)

L7 ANSWER 75 OF 85 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1964:495994 CAPLUS
DN 61:95994
OREF 61:16717f-g
TI Action of organic-phosphorus insecticides in binary mixtures on insects and **mites**
AU Roslavtseva, S. A.
SO Aspirantsk. Raboty, Nauchn.-Issled. Inst. po Udobr. i Insektofungitsidam, Moscow (1963) 51-65
From: Ref. Zh., Khim. 1964, Abstr. No. 7N326.
DT Journal
LA Unavailable
AB The augmented toxicity of mixts. of org.-P compds. was confirmed. Mixts. tested were: chlorophos (I) with methylmercaptophos (II) (for rice weevil, housefly, aphids, and red spider **mite**); I with thiophos (for rice weevil, **bees**, aphids; somewhat less effective for housefly, and red spider **mites**); I with **acetone** (for rice weevil and housefly); and I with acetophos (IV) (for housefly). Mixts. of I and II (for sage **mite**), I and **acetone**, and I and III (for lackey moth (Malacosoma neustria) larvae) had an additive action. A mixt. of I and II (for **honeybee**) had an antagonistic action. The rate of penetration of a mixt. was no faster than that of its components. Mixts. of I with thiophos, I with **acetone**, and I with III were most effective.
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L7 ANSWER 76 OF 85 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1958:117695 CAPLUS
DN 52:117695
OREF 52:20857c-d
TI Two new selective insecticides
AU Lhoste, J.
CS Museum Natl. Histoire Nat., Paris
SO Proc. Papers Tech. Meeting, Intern. Union Protect. Nature, Copenhagen (1956), Volume Date 1954 169-70
DT Journal
LA French
AB The firm, J. R. Geigy A.-G. of Basel has developed two new selective insecticides which kill the insect intended without affecting the insect's natural predators. Isolan (I) (1-isopropyl-3-methyl-5-pyrazolyl dimethylcarbamate) is a liquid aphicide that is very toxic to warm-blooded animals. Chlorobenzilate is an **acaricide** harmless to animals. In vapor form it is harmless to **bees**. I is a red-brown liquid,

miscible in water, alc., and **acetone**. II is a yellow, viscous
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L7 ANSWER 77 OF 85 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1955:6053 CAPLUS
DN 49:6053
OREF 49:1270e-g
TI Capability of resistance of the internal **mite** of **honeybees** and its possible control
AU Kaeser, W.
CS Tierhyg. Inst., Freiburg i. Br., Germany
SO Zeitschrift fuer Bienenforschung (1952), 1, 191-216
CODEN: ZBIEAU; ISSN: 0044-2399
DT Journal
LA Unavailable
AB cf. following abstr. **Honeybees** infested with the **mite** A carapis woodi were fed various concns. of NaCl, $MgCl_2$, Na_2HPO_4, $CuSO_4$, $Na_2S_2O_3$, colloidal S, mustard oil (I), thymol (satd. aq. soln.) (II), terpineol (III), urea, glycocoll, cysteine-HCl, tyrosine, acetylcholine, or one of 27 com. prepns. The **bees** were also exposed to the vapors of safrole, $PhNO_2$, gasoline, wintergreen oil, I, II, III, cryst. thymol, KCN (satd. aq. soln.), CH_2:CHCN, Me_2CO, or one of 5 com. prepns. In no case could the **mites** be killed without also killing the **bees**; I and III were particularly active against both **bees** and **mites**. Vapors of the Belgian com. prepn. "P.K." and of the German com. prepn. "Delacan" (compns. not given) rapidly killed the **mites** without appreciably affecting the **bees**.

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IT **Acarapis** woodi and(or) **Acarine** disease **mite**
(control of)
IT Insecticides
(for **acarine** disease of **bees**)
IT Gasoline
PK
(in **Acarapis** woodi control on **bees**)
IT Oils
Oils
(mustard, in **Acarapis** woodi control on **bees**)
IT Oils

(wintergreen, in **Acarapis** woodi control on **bees**)
IT Delacan
(in **Acarapis** woodi control in **bees**)
IT Cysteine, hydrochloride
(in **Acarapis** woodi control on **bees**)
IT 107-13-1, Acrylonitrile
(as fumigant, in **Acarapis** woodi control on **bees**)
IT 7704-34-9, Sulfur
(colloidal, in **Acarapis** woodi control on **bees**)
IT 51-84-3, Choline, acetyl- 56-40-6, Glycine 57-13-6, Urea 60-18-4, Tyrosine **67-64-1, Acetone** 89-83-8, Thymol 94-59-7, Safrole 98-95-3, Benzene, nitro- 7558-79-4, Sodium phosphate, Na2HPO4 7647-14-5, Sodium chloride 7758-98-7, Copper sulfate 7772-98-7, Sodium thiosulfate 7786-30-3, Magnesium chloride 8000-41-7, Terpineol
(in **Acarapis** woodi control on **bees**)
IT 151-50-8, Potassium cyanide
(in Acarpis woodi control on **bees**)

L7 ANSWER 78 OF 85 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1951:30842 CAPLUS
DN 45:30842
OREF 45:5354f-i,5355a-f
TI Properties of acetylcholine esterases from the **bee**, the fly, and the mouse and their relation to insecticide action
AU Metcalf, Robert L.; March, Ralph B.
CS Univ. of California Citrus Expt. Sta., Riverside
SO Journal of Economic Entomology (1950), 43, 670-7
CODEN: JEENAI; ISSN: 0022-0493
DT Journal
LA Unavailable
AB Previous work (C.A. 44, 3663f) suggested that specific differences exist in the protein structures of the cholinesterase (I) from the central nervous systems of flies and **bees**; and that such differences may be involved in the toxicity of certain insecticides to these insects. Similar differences were not recorded by Augustinsson (C.A. 42, 5063g) in a study of several organisms. The desirability of developing insecticides nontoxic to the **parasites** and predators of injurious insects yet of low mammalian toxicity led M. and M. to undertake the present study. Compd. I was assayed by the Warburg manometric technique (cf. Metcalf and March (C.A. 44, 3663f). Pulps of worker **bee** (**Apis** mellifera) heads, of housefly (Musca domestica) heads, and of white mouse brain were homogenized in a buffer (0.15 M NaCl, 0.04 M MgCl2, 0.0.25 M NaHCO3). The anticholinesterase (II) activity of a no. of org. phosphate compds. and carbamate compds. was detd.; the former were added in **acetone** soln., the latter in aq. soln. to the exptl. flasks. The flasks were flushed with 95% N2 and 5% CO2 and incubated 10 min., then acetylcholine or other substrate was added and the flasks were shaken 5 min. The amt. of CO2 produced in 30 min. (longer with some II) was detd. by comparison with a standard. The values obtained were plotted as probits of percentage inhibition against log mol. concn.; 50% inhibition points were detd. from the plots by inspection. The LD50 values for the fly and **bee** were obtained by topical application of II in **acetone** soln.; for the male mouse by oral administration of II in propylene glycol soln. or from the literature. The comparative I activity (acetylcholine hydrolyzed per mg. brain per hr.) follows: female **bee** 2.5; female fly 11; male mouse 0.356. I activity of **bee** brain always increased on overnight storage; this was not true of fly brain. The relative II activity of the org. phosphates (in vitro mol. concn. for 50% I inhibition) for fly, **bee**, and mouse brain, resp., and the resp. toxicity (LD50 in mg./kg.) follow: diethyl p-nitrophenyl phosphate, activity 2.6 .times. 10-8, 1.9 .times. 10-8, 1 .times. 10-7, toxicity 0.5, 0.6, 3; diethyl p-nitrophenyl thiophosphate

(parathion), 4.5 .times. 10-7, 1 .times. 10-6, 2.5 .times. 10-6, 0.9, 3.5, 6; diisopropyl p-nitrophenyl thiophosphate 2 .times. 10-5, 1.4 .times. 10-2, > 1 .times. 10-2, 4.2, > 1000, > 100; dipropyl p-nitrophenyl thiophosphate 5 .times. 10-6, 1.6 .times. 10-5, 3 .times. 10-5, 4, 30, > 100; ethyl p-nitrophenyl thiobenzenephosphonate 3 .times. 10-7, 8.2 .times. 10-7, 1.5 .times. 10-5, 1.9, 3, 50-100; tetraisopropyl pyrophosphate 1 .times. 10-7, 1.5 .times. 10-5, 2 .times. 10-5, 6.5, 23, 50-100; tetraisopropyl dithiopyrophosphate 3 .times. 10-6, 3 .times. 10=4, 1.5 .times. 10=3, 30, 1000 > 200; tetrapropyl dithiopyrophosphate 5 .times. 10-7, 3 .times. 10-6, 5 .times. 10-5, 15, 200, > 200; diisopropyl fluorophosphonate 1.3 .times. 10-8, 2 .times. 10-7, 8 .times. 10-8, 15, 30, 37. The following carbamate-type inhibitors gave these results (in mol. concn. for 50% inhibition of fly, **bee**, and mouse brain I, resp.): physostigmine sulfate 2 .times. 10-8, 8 .times. 10-8, 3 .times. 10-7; dimethylcarbamate of (2-hydroxy-5-phenylbenzyl)trimethylammonium chloride 3 .times. 10-8, 3 .times. 10-6, 1.5 .times. 10-7; N-p-chlorophenyl-N-methylcarbamate of m-hydroxyphenyltrimethylammonium bromide 2.4 .times. 10-5, 4 .times. 10-6, 4 .times. 10-9. The study revealed distinct biochem. differences in the sp. I in brain tissues of the fly, **bee**, and mouse which are reflected in the II activity of org. phosphates (contg. isopropoxy group or aromatic rings, or both or thiophosphoryl groups) in the II activity of certain carbamic acid esters, and in the kinetics of I behavior toward substrates such as .beta.-methylcholine. The relative differences in II activity of the org. phosphate compds. det. largely the toxicities of these compds. to the organisms studied. The extremely high content of I in the fly brain is noteworthy. A detailed knowledge of the properties of the various I compds. and a correlation of the structure of various org. phosphate II compds. may lead to the development of insecticides with large margins of safety for warm-blooded animals, and for beneficial **parasites** and predators of insect **pests**. 22 references.

TI Properties of acetylcholine esterases from the **bee**, the fly, and the mouse and their relation to insecticide action

AB Previous work (C.A. 44, 3663f) suggested that specific differences exist in the protein structures of the cholinesterase (I) from the central nervous systems of flies and **bees**; and that such differences may be involved in the toxicity of certain insecticides to these insects. Similar differences were not recorded by Augustinsson (C.A. 42, 5063g) in a study of several organisms. The desirability of developing insecticides nontoxic to the **parasites** and predators of injurious insects yet of low mammalian toxicity led M. and M. to undertake the present study. Compd. I was assayed by the Warburg manometric technique (cf. Metcalf and March (C.A. 44, 3663f). Pulps of worker **bee** (**Apis** mellifera) heads, of housefly (Musca domestica) heads, and of white mouse brain were homogenized in a buffer (0.15 M NaCl, 0.04 M MgCl2, 0.0.25 M NaHCO3). The anticholinesterase (II) activity of a no. of org. phosphate compds. and carbamate compds. was detd.; the former were added in **acetone** soln., the latter in aq. soln. to the exptl. flasks. The flasks were flushed with 95% N2 and 5% CO2 and incubated 10 min., then acetylcholine or other substrate was added and the flasks were shaken 5 min. The amt. of CO2 produced in 30 min. (longer with some II) was detd. by comparison with a standard. The values obtained were plotted as probits of percentage inhibition against log mol. concn.; 50% inhibition points were detd. from the plots by inspection. The LD50 values for the fly and **bee** were obtained by topical application of II in **acetone** soln.; for the male mouse by oral administration of II in propylene glycol soln. or from the literature. The comparative I activity (acetylcholine hydrolyzed per mg. brain per hr.) follows: female **bee** 2.5; female fly 11; male mouse 0.356. I activity of **bee** brain always increased on overnight storage; this was not true of fly brain. The relative II activity of the org. phosphates (in vitro mol. concn. for 50% I inhibition) for fly, **bee**, and mouse brain,

resp., and the resp. toxicity (LD50 in mg./kg.) follow: diethyl p-nitrophenyl phosphate, activity 2.6 .times. 10-8, 1.9 .times. 10-8, 1 .times. 10-7, toxicity 0.5, 0.6, 3; diethyl p-nitrophenyl thiophosphate (parathion), 4.5 .times. 10-7, 1 .times. 10-6, 2.5 .times. 10-6, 0.9, 3.5, 6; diisopropyl p-nitrophenyl thiophosphate 2 .times. 10-5, 1.4 .times. 10-2, > 1 .times. 10-2, 4.2, > 1000, > 100; dipropyl p-nitrophenyl thiophosphate 5 .times. 10-6, 1.6 .times. 10-5, 3 .times. 10-5, 4, 30, > 100; ethyl p-nitrophenyl thiobenzenephosphonate 3 .times. 10-7, 8.2 .times. 10-7, 1.5 .times. 10-5, 1.9, 3, 50-100; tetraisopropyl pyrophosphate 1 .times. 10-7, 1.5 .times. 10-5, 2 .times. 10-5, 6.5, 23, 50-100; tetraisopropyl dithiopyrophosphate 3 .times. 10-6, 3 .times. 10=4, 1.5 .times. 10=3, 30, 1000 > 200; tetrapropyl dithiopyrophosphate 5 .times. 10-7, 3 .times. 10-6, 5 .times. 10-5, 15, 200, > 200; diisopropyl fluorophosphonate 1.3 .times. 10-8, 2 .times. 10-7, 8 .times. 10-8, 15, 30, 37. The following carbamate-type inhibitors gave these results (in mol. concn. for 50% inhibition of fly, **bee**, and mouse brain I, resp.): physostigmine sulfate 2 .times. 10-8, 8 .times. 10-8, 3 .times. 10-7; dimethylcarbamate of (2-hydroxy-5-phenylbenzyl)trimethylammonium chloride 3 .times. 10-8, 3 .times. 10-6, 1.5 .times. 10-7; N-p-chlorophenyl-N-methylcarbamate of m-hydroxyphenyltrimethylammonium bromide 2.4 .times. 10-5, 4 .times. 10-6, 4 .times. 10-9. The study revealed distinct biochem. differences in the sp. I in brain tissues of the fly, **bee**, and mouse which are reflected in the II activity of org. phosphates (contg. isopropoxy group or aromatic rings, or both or thiophosphoryl groups) in the II activity of certain carbamic acid esters, and in the kinetics of I behavior toward substrates such as .beta.-methylcholine. The relative differences in II activity of the org. phosphate compds. det. largely the toxicities of these compds. to the organisms studied. The extremely high content of I in the fly brain is noteworthy. A detailed knowledge of the properties of the various I compds. and a correlation of the structure of various org. phosphate II compds. may lead to the development of insecticides with large margins of safety for warm-blooded animals, and for beneficial **parasites** and predators of insect **pests**. 22 references.

IT **Bees**
Mice
(cholinesterases of, insecticide action and)

IT 9001-08-5, Cholinesterase
(of **bee**, fly and mouse, insecticide action and)

L7 ANSWER 79 OF 85 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1932:58900 CAPLUS
DN 26:58900
OREF 26:6055h-i
TI A comparison between rotenone and pyrethrins as contact insecticides
AU Ginsburg, Joseph M.; Schmitt, J. B.
SO Journal of Economic Entomology (1932), 25, 918-22
CODEN: JEENAI; ISSN: 0022-0493
DT Journal
LA Unavailable

AB **Acetone** exts. of derris root, pyrethrum flowers and an **acetone** soln. of rotenone were dild. with water and applied as contact sprays to aphids and **honeybees**. Derris ext. and rotenone are much more toxic to aphids than to **honeybees**; pyrethrum ext. is more toxic to **honeybees** than to aphids. Conclusion: Because an insecticide is toxic to one group of insects one cannot assume that other insects will react the same way toward it.

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Conclusion: Because an insecticide is toxic to one group of insects one cannot assume that other insects will react the same way toward it.

IT Pyrethrins
(in red-spider **mite** control)

IT 54-11-5, Nicotine 83-79-4, Rotenone
(in red-spider **mite** control)

L7 ANSWER 80 OF 85 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1925:20523 CAPLUS
DN 19:20523
OREF 19:2685d-g
TI Contributions to the knowledge of bacterial enzymes (catalase and peroxidase)
AU Stapp, C.
SO Centr. Bakt. Parasitenk., I Abt. Orig. (1924), 92, 161-93
DT Journal
LA Unavailable

AB Catalase was detected in 10-year-old dry cultures of Streptococcus **apis**, B. coli, B. fluorescens and Vibrio Dunbar, but not in the organism of the crab **pest**. The method of drying influenced the stability of the catalase. When the culture was extd. with CHCl3 and **acetone** and dried the catalase was destroyed, but not when it was dried over H2SO4, even when kept at room temp. Such salts as KNO3, K2SO4 and KClO3 did not all exert the same influence on catalase production. KNO3 increased it. Bubbling such gases as H, N or O for 1 or 2 hrs. prior to the addn. of H2O2 had no influence on the activity of the catalase. Heating cultures of non-spore formers to 80.degree. for 15 min. inactivated the catalase, but spore formers withstood a temp. of 100.degree.. Anaerobes produced less catalase than aerobes. For B. prodigiosus, Staphylococcus albus and Staph. aureus, the min. H-ion concn. for catalase activity was 9.1, the optimum between 8.0 and 6.5, and the max. 3.1. Treatment with strong HCl followed by neutralization with NaOH or vice versa effected different species differently. CHCl3 and **acetone** slowly weakened the catalase. 0.008% I inactivated catalase in 1 hr.; CS2 checked its activity, but to different degrees with different bacteria. Peroxidase was formed by all bacteria except streptococci. In contradistinction to catalase it is indifferent to neutral salts, acids, alkalies, I, CS2, C6H6, toluene, xylene, alc., and narcotics.

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L7 ANSWER 81 OF 85 CABA COPYRIGHT 2004 CABI on STN
AN 80:7557 CABA
DN 19790209312
TI Chemical for controlling **honeybee parasites**
CS USSR, All-Union Scientific Research Institute of Veterinary Sanitation
PI 19780000
SO Japanese Kokai (unexamined patent application), No. 53-139722, pp. 7. B.
DT Patent
LA Japanese
ED Entered STN: 19941101
Last Updated on STN: 19941101
AB **Honeybee** diseases caused by **Acarapis** woodi and **Varroa** jacobsoni are controlled with N-methylcarbamates. Thus, 0.02% 1-naphthyl N-methylcarbamate in **acetone** controlled infestations of these **mites** in **honeybees**. [Chem.Abstr. 90 : 116454p (1979).] F. B. Wells
TI Chemical for controlling **honeybee parasites**.
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BT **Apis**; Apidae; Hymenoptera; insects; arthropods; invertebrates; animals; **Acari**; Arachnida
CT honey **bees**; control; natural enemies
ST **mite**; carbamates and derivatives
ORGN **mites**

L7 ANSWER 82 OF 85 CABA COPYRIGHT 2004 CABI on STN
AN 80:7345 CABA
DN 19790209033
TI **Acaricide** preparations for the diagnosis and control of ectoparasites of **honeybees**
Akarizides Praparat zur Diagnostik und Bekampfung von Ektoparasiten der Bienen
AU Poljakov, A. A.; and 9 others; Polyakov, A. A.
CS Vsesoyuznoi Nauchno-issledovatel'skii Inst. Veterinarnoi Sanitarii, Moscow, USSR.
PI 19780000
SO German Federal Republic Offenlegungsschrift, No. 2719722, pp. 16. B.
DT Patent
LA German
ED Entered STN: 19941101
Last Updated on STN: 19941101
AB N-methylcarbamates control infestation of **honeybees** by **Acarapis** woodi and by **Varroa** jacobsoni. Thus, application to hives of a composition containing 0.025% by weight methyl-N-methylcarbamate, 19.975% **acetone**, and 80% difluorodichloromethane, completely controlled these **mites**. The compounds are also useful for diagnosis, since their application to infested **bees** led to the appearance of dead V. jacobsoni on the bottom of the hive. [Chem. Abstr. 90 : 49668w (1979).] F. B. Wells
TI [**Acaricide** preparations for the diagnosis and control of ectoparasites of **honeybees**].
Akarizides Praparat zur Diagnostik und Bekampfung von Ektoparasiten der Bienen.
AB N-methylcarbamates control infestation of **honeybees** by **Acarapis** woodi and by **Varroa** jacobsoni. Thus, application to hives of a composition containing 0.025% by weight methyl-N-methylcarbamate, 19.975% **acetone**, and 80% difluorodichloromethane, completely controlled these **mites**. The compounds are also useful for diagnosis, since their application to

infested **bees** led to the appearance of dead V. jacobsoni on the bottom of the hive. [Chem. Abstr. 90 : 49668w (1979).]. . .
BT **Apis**; Apidae; Hymenoptera; insects; arthropods; invertebrates; animals; **pesticides**; **Acari**; Arachnida; **Varroa** ; Varroidae; Mesostigmata; **Acarapis**; Acarapidae; Prostigmata
CT honey **bees**; control; **acaricides**; natural enemies
ST **mite**; carbamates and derivatives
ORGN **mites**; **Varroa** jacobsoni; **Acarapis** woodi

L7 ANSWER 83 OF 85 CROPU
AN 1994-85504 CROPU I G
TI The dynamics of the toxicity of contact insecticides to the honey **bee**.
AU Illarionov A I
CS Univ.Voronezh-State
LO Voronezh, Russia
SO Agrokhimiya (1994, No. 5, 99-107) 1 Fig. 2 Tab. 8 Ref.
CODEN: AGKYAU
AV K. D. Glinka Voronezh State Agrarian University, Voronezh, Russia.
DT Journal
LA Russian
FA AB; LA; CT
AB Contact and topical toxicity of the following insecticides to honey **bees** was compared: Decis (deltamethrin) 2.5% EC, Cymbush (cypermethrin) 20% EC, Karate (lambda cyhalothrin) 5% EC, Talstar (bifenthrin) 10% EC, Mavrik (fluvalinate) 2E, Sumi-alpha (esfenvalerate) 5% EC, Trebon (etofenprox) 30% EC, Fastak (alpha-cypermethrin) 10% EC, Sumicidin (fenvalerate) 20% EC, Cyanox (cyanophos), Hostaquick (heptenophos) 50% EC, Actellic (pirimiphos-methyl) 50% EC, Basudin (diazinon) 60% EC, chlorofos (trichlorfon), Zolone (phosalone) 35% EC and Gardona (tetrachlorvinphos) 50% SP. Mortality reached a minimum at 48 hr, indicating that at least this period should be used for toxicity testing. Sensitivity was generally greater when insecticides were applied to thoracic tergites than when **bees** contacted treated surfaces; Mavrik 2E and Zolone were exceptions.
TI The dynamics of the toxicity of contact insecticides to the honey **bee**.
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ABEX Insecticides (in 1 ul **acetone**) were applied to the thoracic tergites of worker **bees** (aged 20-25 days), or **bees** were placed in contact with treated surfaces (cellophane discs) bearing insecticides. Some agents induced toxic effects within 3 hr, i.e.. . .
CT APIDAE *SE; **APIS** *SE; **BEE** *SE; HYMENOPTERA *SE; CONTACT *FT; TOPICAL *FT; NON-TARGET *FT; DOSAGE *FT; LAB.TEST *FT; EXPOSURE *FT; TIME *FT; ACTION-MECHANISM *FT; APPL.TECHNIQUE. . .
[03] LAMBDA-CYHALOTHRIN *SE; KARATE *SE; LCYHALOTH *RN; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; SE *FT
[04] BIPHENATE *SE; TALSTAR *SE; BIPHENATE *RN; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; SE *FT
[05] FLUVALINATE *SE; MAVRIK *SE; FLUVALINA *RN; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; SE *FT
[06] ESFENVALERATE *SE; SUMI-ALPHA *SE; ESFENVALE *RN; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; SE *FT
[07] ETOFENPROX *SE; TREBON *SE; ETHOFENPR *RN; EMULSION *FT; INSECTICIDES

*FT; FORMULATION *FT; SE *FT. . . *FT; STOMACH-POISONS *FT;
FORMULATION *FT; SE *FT

[09] FENVALERATE *SE; SUMICIDIN *SE; FENVALERA *RN; EMULSION *FT;
FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS
*FT; SE *FT

[10] CYANOPHOS *SE; CYANOX *SE; CYANOPHOS *RN; INSECTICIDES *FT;
ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT

[11] HEPTENOPHOS *SE; HOSTAQUICK *SE; HEPTENOPH *RN; EMULSION *FT;
FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS
*FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE
*FT

[12] PIRIMIPHOS-METHYL *SE; ACTELLIC *SE; PIRIMIPHM *RN; EMULSION *FT;
FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS
*FT; FUMIGANTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE
*FT

[13] DIAZINON *SE; BASUDIN *SE; DIAZINON *RN; EMULSION *FT; FORMULATION
*FT; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES
*FT; ORGANOPHOSPHORUS *FT; SE *FT

[14] TRICHLORFON *SE; TRICLFON *RN; INSECTICIDES *FT; CONTACTS *FT;
STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE
*FT

[15] PHOSALONE *SE; ZOLONE *SE; PHOSALONE *RN; EMULSION *FT; FORMULATION
*FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT;
ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT

[16] TETRACHLORVINPHOS *SE; GARDONA *SE; TETRACVIN *RN; SUSPENSION *FT;
FORMULATION *FT;. . .

[04] BIPHENATE *SE; TALSTAR *SE; BIPHENATE *RN; EMULSION *FT; FORMULATION
*FT; INSECTICIDES *FT; **ACARICIDES** *FT; SE *FT

[05] FLUVALINATE *SE; MAVRIK *SE; FLUVALINA *RN; EMULSION *FT; FORMULATION
*FT; INSECTICIDES *FT; **ACARICIDES** *FT; SE *FT

[06] ESFENVALERATE *SE; SUMI-ALPHA *SE; ESFENVALE *RN; EMULSION *FT;
FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS
*FT; SE *FT

[07] ETOFENPROX *SE; TREBON *SE; ETHOFENPR *RN; EMULSION *FT; INSECTICIDES
*FT; FORMULATION *FT; SE *FT. . . *FT; STOMACH-POISONS *FT;
FORMULATION *FT; SE *FT

[09] FENVALERATE *SE; SUMICIDIN *SE; FENVALERA *RN; EMULSION *FT;
FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS
*FT; SE *FT

[10] CYANOPHOS *SE; CYANOX *SE; CYANOPHOS *RN; INSECTICIDES *FT;
ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT

[11] HEPTENOPHOS *SE; HOSTAQUICK *SE; HEPTENOPH *RN; EMULSION *FT;
FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS
*FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE
*FT

[12] PIRIMIPHOS-METHYL *SE; ACTELLIC *SE; PIRIMIPHM *RN; EMULSION *FT;
FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS
*FT; FUMIGANTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE
*FT

[13] DIAZINON *SE; BASUDIN *SE; DIAZINON *RN; EMULSION *FT; FORMULATION
*FT; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES
*FT; ORGANOPHOSPHORUS *FT; SE *FT

[14] TRICHLORFON *SE; TRICLFON *RN; INSECTICIDES *FT; CONTACTS *FT;
STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE
*FT

[15] PHOSALONE *SE; ZOLONE *SE; PHOSALONE *RN; EMULSION *FT; FORMULATION
*FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT;
ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT

[16] TETRACHLORVINPHOS *SE; GARDONA *SE; TETRACVIN *RN; SUSPENSION *FT;
FORMULATION *FT;. . .

[05] FLUVALINATE *SE; MAVRIK *SE; FLUVALINA *RN; EMULSION *FT; FORMULATION
*FT; INSECTICIDES *FT; **ACARICIDES** *FT; SE *FT

[06] ESFENVALERATE *SE; SUMI-ALPHA *SE; ESFENVALE *RN; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; SE *FT
[07] ETOFENPROX *SE; TREBON *SE; ETHOFENPR *RN; EMULSION *FT; INSECTICIDES *FT; FORMULATION *FT; SE *FT. . . *FT; STOMACH-POISONS *FT; FORMULATION *FT; SE *FT
[09] FENVALERATE *SE; SUMICIDIN *SE; FENVALERA *RN; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; SE *FT
[10] CYANOPHOS *SE; CYANOX *SE; CYANOPHOS *RN; INSECTICIDES *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT
[11] HEPTENOPHOS *SE; HOSTAQUICK *SE; HEPTENOPH *RN; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT
[12] PIRIMIPHOS-METHYL *SE; ACTELLIC *SE; PIRIMIPHM *RN; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; FUMIGANTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT
[13] DIAZINON *SE; BASUDIN *SE; DIAZINON *RN; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT
[14] TRICHLORFON *SE; TRICLFON *RN; INSECTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT
[15] PHOSALONE *SE; ZOLONE *SE; PHOSALONE *RN; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT
[16] TETRACHLORVINPHOS *SE; GARDONA *SE; TETRACVIN *RN; SUSPENSION *FT; FORMULATION *FT;. . .
[06] ESFENVALERATE *SE; SUMI-ALPHA *SE; ESFENVALE *RN; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; SE *FT
[07] ETOFENPROX *SE; TREBON *SE; ETHOFENPR *RN; EMULSION *FT; INSECTICIDES *FT; FORMULATION *FT; SE *FT. . . *FT; STOMACH-POISONS *FT; FORMULATION *FT; SE *FT
[09] FENVALERATE *SE; SUMICIDIN *SE; FENVALERA *RN; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; SE *FT
[10] CYANOPHOS *SE; CYANOX *SE; CYANOPHOS *RN; INSECTICIDES *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT
[11] HEPTENOPHOS *SE; HOSTAQUICK *SE; HEPTENOPH *RN; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT
[12] PIRIMIPHOS-METHYL *SE; ACTELLIC *SE; PIRIMIPHM *RN; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; FUMIGANTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT
[13] DIAZINON *SE; BASUDIN *SE; DIAZINON *RN; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT
[14] TRICHLORFON *SE; TRICLFON *RN; INSECTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT
[15] PHOSALONE *SE; ZOLONE *SE; PHOSALONE *RN; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT
[16] TETRACHLORVINPHOS *SE; GARDONA *SE; TETRACVIN *RN; SUSPENSION *FT; FORMULATION *FT;. . .
[09] FENVALERATE *SE; SUMICIDIN *SE; FENVALERA *RN; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS

*FT; SE *FT

[10] CYANOPHOS *SE; CYANOX *SE; CYANOPHOS *RN; INSECTICIDES *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT

[11] HEPTENOPHOS *SE; HOSTAQUICK *SE; HEPTENOPH *RN; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT

[12] PIRIMIPHOS-METHYL *SE; ACTELLIC *SE; PIRIMIPHM *RN; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; FUMIGANTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT

[13] DIAZINON *SE; BASUDIN *SE; DIAZINON *RN; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT

[14] TRICHLORFON *SE; TRICLFON *RN; INSECTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT

[15] PHOSALONE *SE; ZOLONE *SE; PHOSALONE *RN; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT

[16] TETRACHLORVINPHOS *SE; GARDONA *SE; TETRACVIN *RN; SUSPENSION *FT; FORMULATION *FT;. . .

[11] HEPTENOPHOS *SE; HOSTAQUICK *SE; HEPTENOPH *RN; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; SYSTEMICS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT

[12] PIRIMIPHOS-METHYL *SE; ACTELLIC *SE; PIRIMIPHM *RN; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; FUMIGANTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT

[13] DIAZINON *SE; BASUDIN *SE; DIAZINON *RN; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT

[14] TRICHLORFON *SE; TRICLFON *RN; INSECTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT

[15] PHOSALONE *SE; ZOLONE *SE; PHOSALONE *RN; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT

[16] TETRACHLORVINPHOS *SE; GARDONA *SE; TETRACVIN *RN; SUSPENSION *FT; FORMULATION *FT;. . .

[12] PIRIMIPHOS-METHYL *SE; ACTELLIC *SE; PIRIMIPHM *RN; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; FUMIGANTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT

[13] DIAZINON *SE; BASUDIN *SE; DIAZINON *RN; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT

[14] TRICHLORFON *SE; TRICLFON *RN; INSECTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT

[15] PHOSALONE *SE; ZOLONE *SE; PHOSALONE *RN; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT

[16] TETRACHLORVINPHOS *SE; GARDONA *SE; TETRACVIN *RN; SUSPENSION *FT; FORMULATION *FT;. . .

[13] DIAZINON *SE; BASUDIN *SE; DIAZINON *RN; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT

[14] TRICHLORFON *SE; TRICLFON *RN; INSECTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT

[15] PHOSALONE *SE; ZOLONE *SE; PHOSALONE *RN; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT
[16] TETRACHLORVINPHOS *SE; GARDONA *SE; TETRACVIN *RN; SUSPENSION *FT; FORMULATION *FT;. . .
[15] PHOSALONE *SE; ZOLONE *SE; PHOSALONE *RN; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; CONTACTS *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT
[16] TETRACHLORVINPHOS *SE; GARDONA *SE; TETRACVIN *RN; SUSPENSION *FT; FORMULATION *FT;. . .

L7 ANSWER 84 OF 85 CROPU
AN 1993-86009 CROPU I S G
TI The Kinetics of Insecticide Toxicity in the Honey **Bee**.
AU Illarinov A I
LO Voronezh, Russia
SO Agrokhimiya (1993, No. 5, 90-95) 5 Fig. 22 Ref.
CODEN: AGKYAU
AV Voronezh State Agrarian University, Voronezh, Russia.
DT Journal
LA Russian
FA AB; LA; CT
AB Worker **bees** were treated with topical phosalone (6, 8 or 14 ug), Basudin (diazinon) (0.35, 0.4, 0.45 or 0.5 ug), Mavrik 2E (fluvalinate) (5, 8 or 12 ug) or cypermethrin (0.01, 0.02, 0.04 or 0.08 ug). Phosalone penetrated the cuticle more slowly than Basudin, which in turn penetrated more slowly than Mavrik 2E or cypermethrin. Insecticide concentrations in internal tissues represented a balance between absorption and degradation. All insecticides produced dose-dependent mortality, with onset of death coinciding with peak concentrations in internal tissues. In most cases cumulative death rates continued to rise with time, though this was not the case for phosalone, where lethal concentrations were maintained only transiently. Basudin and cypermethrin were much more toxic than phosalone and Mavrik.
TI The Kinetics of Insecticide Toxicity in the Honey **Bee**.
AB Worker **bees** were treated with topical phosalone (6, 8 or 14 ug), Basudin (diazinon) (0.35, 0.4, 0.45 or 0.5 ug), Mavrik 2E. . .
ABEX Insecticides were applied topically to the thoracic tergites of 20-27 day old honey **bee** workers, in 1 ul **acetone**. The phosalone concentration on the cuticle decreased exponentially, and accumulation in internal tissues was slow (rate constant; 0.18/hr). Deaths began. . .
CT **BEE** *SE; HONEY-**BEE** *SE; APIDAE *SE; **APIS** *SE; MELLIFERA *SE; **BEE** *DM; HONEY-**BEE** *DM; APIDAE *DM; **APIS** *DM; MELLIFERA *DM; HYMENOPTERA *SE; HYMENOPTERA *DM; NON-TARGET *FT; TOPICAL *FT; DOSAGE *FT; MORTALITY *FT; PENETRATION *FT; KINETICS *FT; INSECT-TISSUE. . .
[01] PHOSALONE *SE; PHOSALONE *DM; PHOSALONE *RN; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT; DM *FT
[02] DIAZINON *SE; BASUDIN *SE; DIAZINON *DM; BASUDIN *DM; DIAZINON *RN; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT; DM *FT
[03] FLUVALINATE *SE; MAVRIK *SE; FLUVALINATE *DM; MAVRIK *DM; FLUVALINA *RN; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT; **ACARICIDES** *FT; SE *FT; DM *FT
[04] CYPERMETHRIN *SE; CYPERMETHRIN *DM; CYPERMETH *RN; INSECTICIDES *FT; CONTACTS *FT; STOMACH-POISONS *FT; SE *FT;. . .
[02] DIAZINON *SE; BASUDIN *SE; DIAZINON *DM; BASUDIN *DM; DIAZINON *RN; INSECTICIDES *FT; **ACARICIDES** *FT; ANTICHOLINESTERASES *FT; ORGANOPHOSPHORUS *FT; SE *FT; DM *FT
[03] FLUVALINATE *SE; MAVRIK *SE; FLUVALINATE *DM; MAVRIK *DM; FLUVALINA

*RN; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT;
ACARICIDES *FT; SE *FT; DM *FT
[04] CYPERMETHRIN *SE; CYPERMETHRIN *DM; CYPERMETH *RN; INSECTICIDES *FT;
CONTACTS *FT; STOMACH-POISONS *FT; SE *FT;. . .
[03] FLUVALINATE *SE; MAVRIK *SE; FLUVALINATE *DM; MAVRIK *DM; FLUVALINA
*RN; EMULSION *FT; FORMULATION *FT; INSECTICIDES *FT;
ACARICIDES *FT; SE *FT; DM *FT
[04] CYPERMETHRIN *SE; CYPERMETHRIN *DM; CYPERMETH *RN; INSECTICIDES *FT;
CONTACTS *FT; STOMACH-POISONS *FT; SE *FT;. . .

L7 ANSWER 85 OF 85 CROPU
AN 1989-84440 CROPU I Q
TI Effect of Insecticides on **Bees** and Silkworm.
AU Eremina O Y; Roslavtseva S A
LO USSR
SO Agrokhimiya (1989, No. 5, 131-36) 1 Tab. 51 Ref. (M31/AL)
CODEN: AGKYAU
AV No Reprint Address.
DT Journal
LA Russian
FA AB; LA; CT
AB **Pesticide** toxicity to Bombyx mori and **bees** (including **Apis**, Megachile, Nomia, and Bombus spp.) is reviewed. **Pesticides** mentioned are; methyl-parathion (Penncap-M), lindane, deltamethrin (Decis), dimethoate, parathion, carbofuran (Furadan), acephate (Orthene), fenvalerate (Sumicidin), carbaryl, cypermethrin (Ripcord, Cymbush), alphamethrin (Fastac), pirimicarb, phosalone, lambda-cyhalothrin (PP-321 Karate), malathion, oxamyl, fenitrothion, metacil, bifenthrin, cyhalothrin, pyridaphenthion, quinalphos, flucythrinate, propiconazole, endosulfan, pirimiphos-methyl, methomyl, propoxur, chlorpyrifos, fluvalinate (Klartan, Mavrik), bromophos, bromophos-ethyl, dichlorvos, phosphamidon, monocrotophos and permethrin (Ambush).
TI Effect of Insecticides on **Bees** and Silkworm.
AB **Pesticide** toxicity to Bombyx mori and **bees** (including **Apis**, Megachile, Nomia, and Bombus spp.) is reviewed. **Pesticides** mentioned are; methyl-parathion (Penncap-M), lindane, deltamethrin (Decis), dimethoate, parathion, carbofuran (Furadan), acephate (Orthene), fenvalerate (Sumicidin), carbaryl, cypermethrin (Ripcord, Cymbush), alphamethrin. . .
ABEX Repellents such as **2-heptanone** and isopentyl (isoamyl) acetate may reduce the danger to **bees** from insecticide-treated plants, but no effective repellent has been found. The effects of the following **pesticides** on silkworm development are reported: dimethoate, Klartan (fluvalinate), fenvalerate, permethrin, Ambush, Ripcord, Sumidicin, Decis, Dichlorvos, malathion, phosphamidon, carbaryl, endosulfan, monocrotofos and cypermethrin. Decis was 10 times more toxic than Sumicidin and 18 times more than Ambush. LD50 values for **bees** exposed to the following **pesticides** are recorded in ug/**bee**: for **Apis** mellifera: pirimiphos-methyl (0.066), methomyl (0.068), propoxur (0.112), chlorpyrifos (0.115), carbaryl (0.212), fenitrothion (0.310), parathion (0.180 ug/larva), fluvalinate (18.400) and its forms Klartan (9.120) and Mavrik (9.060), and deltamethrin (0.051); and for **Apis** ceriana indica: bromophos (0.603), bromophos-ethyl (0.098), malathion (0.072), malathion technical grade (0.084), quinalphos (0.035), fenvalerate (0.140), fenvalerate technical grade (0.122), and deltamethrin (0.021). Most of the data are relevant to honey **bees**, but some attention is paid to solitary **bees**. For example, mortality rate was 15% in Megachile rotundata 48 hr after treatment with phosalone. Nomia melanderi was more sensitive to Orthene than **Apis** mellifera and M. rotundata, with Bombus ruficinctus being the most sensitive. M.

rotundata was more sensitive to chlorpyrifos than honey **bees,**
with N. melanderi being the least sensitive.

CT [03] **BEE** *SE; **BEE** *TR; **APIS** *SE; **APIS**
*TR; SILKWORM *SE; NOMIA *SE; NOMIA *TR; BOMBUS *SE; BOMBUS *TR;
MEGACHILE *SE; MEGACHILE *TR; DISCUSSION *FT; SE *FT; TR. . .